

Matary Atlas of

GENERAL SURGERY

Mohammed El-Matary



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This book provides an update for medical students who need to keep abreast of recent developments. I hope also it will be useful for those preparing for postgraduate examination.

This book is designed to provide a concise summary of breast, endocrine surgery, general surgery & vascular surgery, in form of slides, jars, specimens & radiographs.

The author is extremely grateful to all the contributors for the high standard of the new chapters, and hopes that you, the reader, will enjoy going through these pages as much as he had.

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Preface

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M. El-Matary

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Wounds



Hematoma



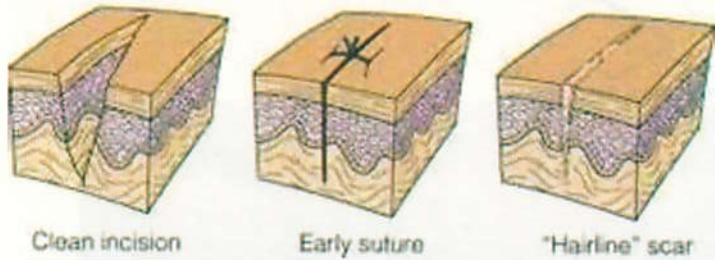
Stretching of the scar



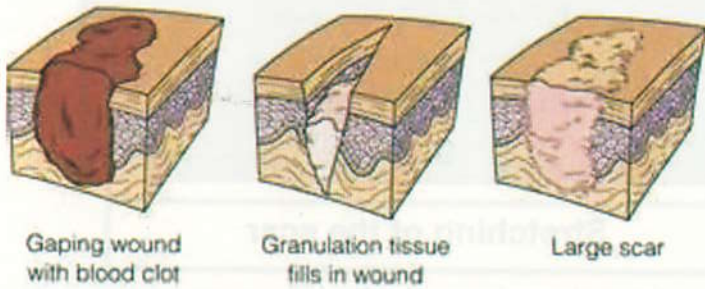
Hypertrophic scar



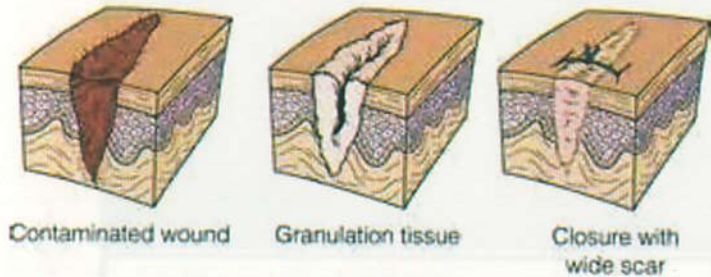
Lacerated wound



Primary intention



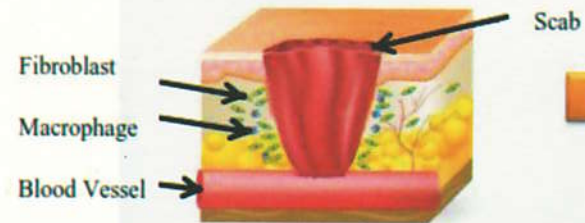
Secondary intention



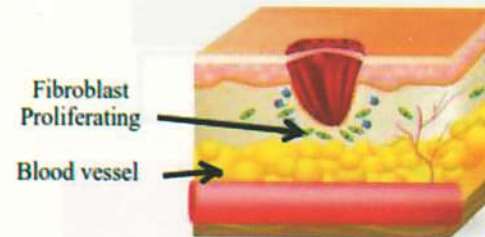
Tertiary intention



Hemostasis and Coagulation



Inflammation



Proliferation and migration



Remodeling

Wound healing process



Wound contracture



Healing by 1ry intension



Bite wound



Missile wounds



Hematoma



Healing by 1ry intension



Penetrating wounds



Lacerated wounds



Keloid scar



Skin abrasions



Healing by secondary intension



Wound failure (wound dehiscence)

THE WOUND TREATMENT SYSTEM

CREATE THE PERFECT HEALING ENVIRONMENT



Absorbable Sutures

Non-absorbable Sutures

Polyglactin



Polypropylene



Polyglactin Fast



Nylon/Polyamide



Polyglycolic Acid



Silk



Catgut Chromic



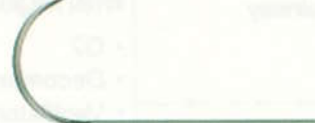
Polyester



Poliglecaprone



Steel



Polydioxanone



Trauma

Primary Survey

Airway

Assessment

- Patency
- Potential difficulty

Management

- O₂
- Basic manoeuvres
- Definitive airway

Breathing

Assessment

- Air entry, trachea
- Oxygenation
- Ventilation

Management

- O₂
- Decompression
- Ventilatory support

Circulation

Assessment

- Level of consciousness
- Skin colour/temperature
- Haemodynamics
- Haemorrhage – external/ concealed

Management

- Control haemorrhage
- Restore volume

Disability

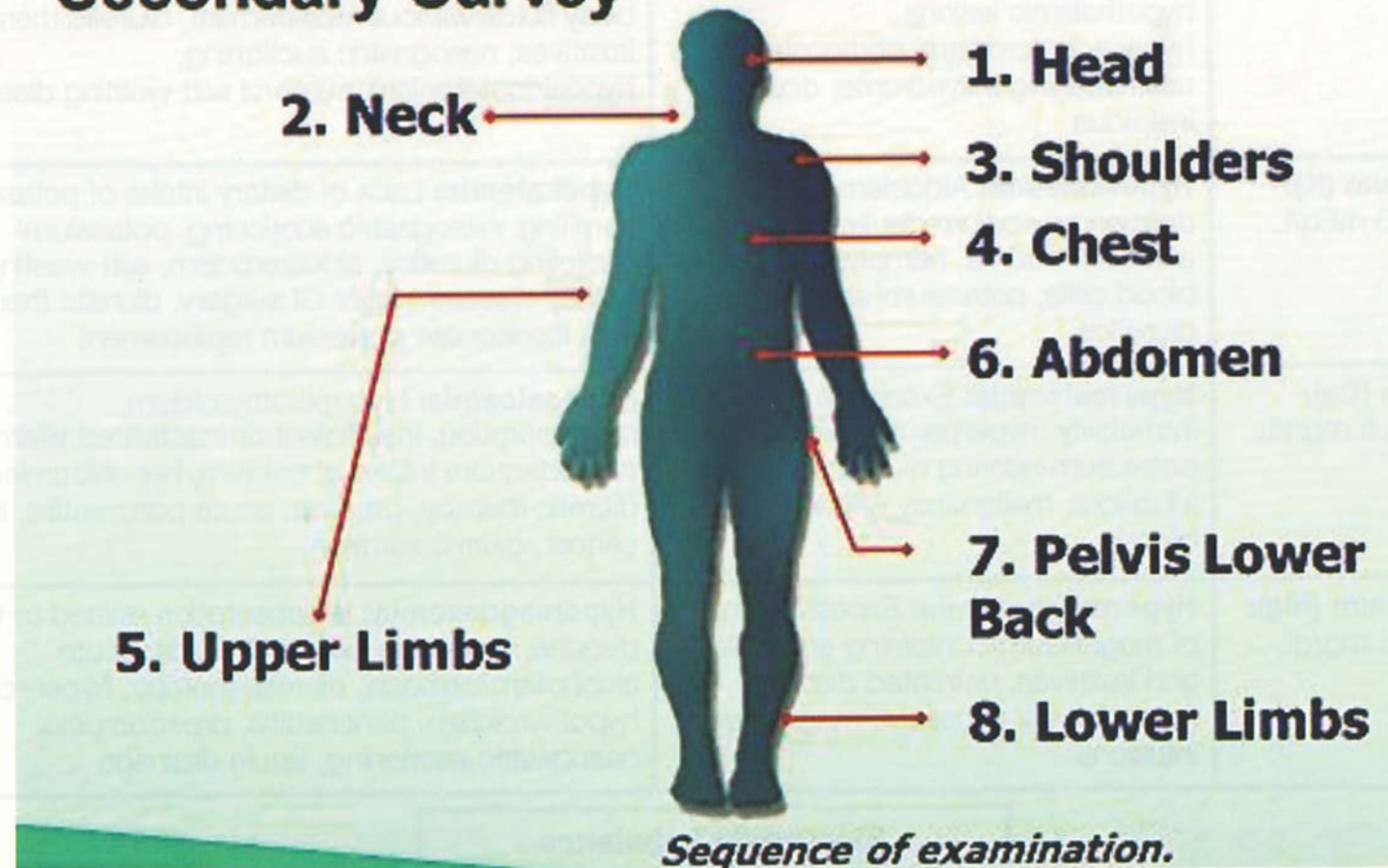
Assessment

- GCS
- Pupils
- Deficits

Management

- Prevent secondary injury

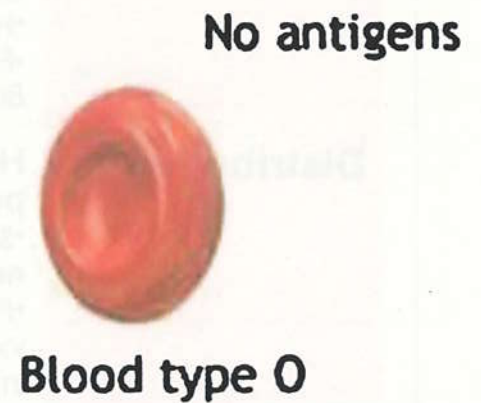
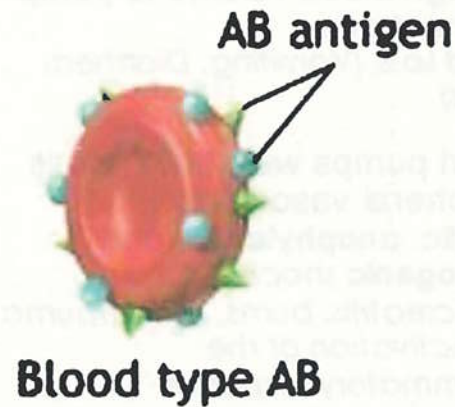
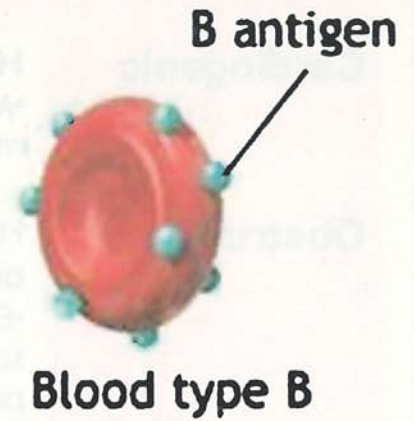
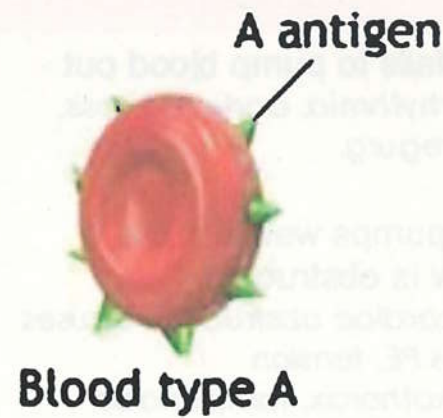
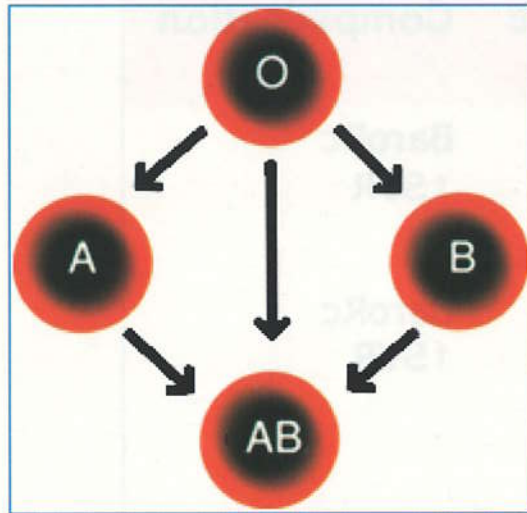
Secondary Survey



Normal range	Causes of elevation	Causes of decline
Sodium (Na): 135 – 145 mEq/L	Hypernatremia: Excessive loss of water through GI system, lungs, or skin; fluid restriction, certain diuretics, hypertonic IV solutions, tube feeding; hypothalamic lesions, hyperaldosteronism, corticosteroid use, Cushing's syndrome, diabetes insipidus	Hyponatremia: Congestive heart failure, cirrhosis, nephrosis, excess fluid intake, syndrome of inappropriate antidiuretic hormone secretion (dilutional hyponatremia); sodium depletion, loss of body fluids without replacement, diuretic therapy, laxatives, nasogastric suctioning, hypoaldosteronism, cerebral salt-wasting disease
Potassium (K): 3.5 – 5.0 mEq/L	Hyperkalemia: Aldosterone deficiency, sodium depletion, acidosis, trauma, hemolysis of red blood cells, potassium-sparing diuretics	Hypokalemia: Lack of dietary intake of potassium, vomiting, nasogastric suctioning, potassium-depleting diuretics, aldosteronism, salt-wasting kidney disease, major GI surgery, diuretic therapy with inadequate potassium replacement
Calcium (Ca): 8.5 – 10.5 mg/dL	Hypercalcemia: Excessive vitamin D, immobility, hyperparathyroidism, potassium-sparing diuretics, ACE inhibitors, malignancy of bone or blood	Hypocalcemia: Hypoparathyroidism, malabsorption, insufficient or inactivated vitamin D or inadequate intake of calcium, hypoalbuminemia, diuretic therapy, diarrhea, acute pancreatitis, bone cancer, gastric surgery
Magnesium (Mg): 1.5 – 2.5 mg/dL	Hypermagnesemia: Excessive use of magnesium-containing antacids and laxatives, untreated diabetic ketoacidosis, excessive magnesium infusions	Hypomagnesemia: Malabsorption related to GI disease, excessive loss of GI fluids, acute alcoholism/cirrhosis, diuretic therapy, hyper- or hypothyroidism, pancreatitis, preeclampsia, nasogastric suctioning, fistula drainage

Electrolyte imbalance

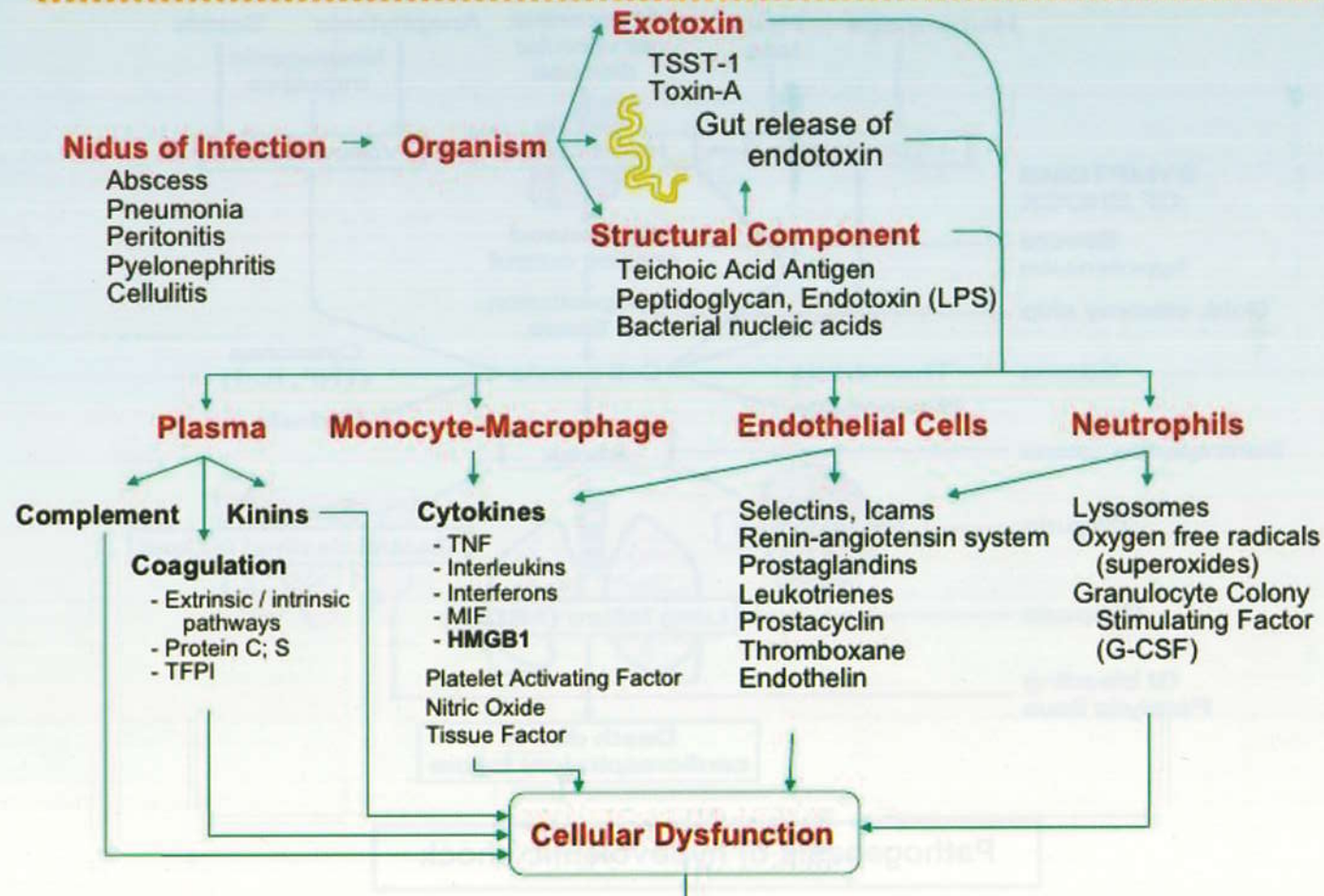
Blood transfusion

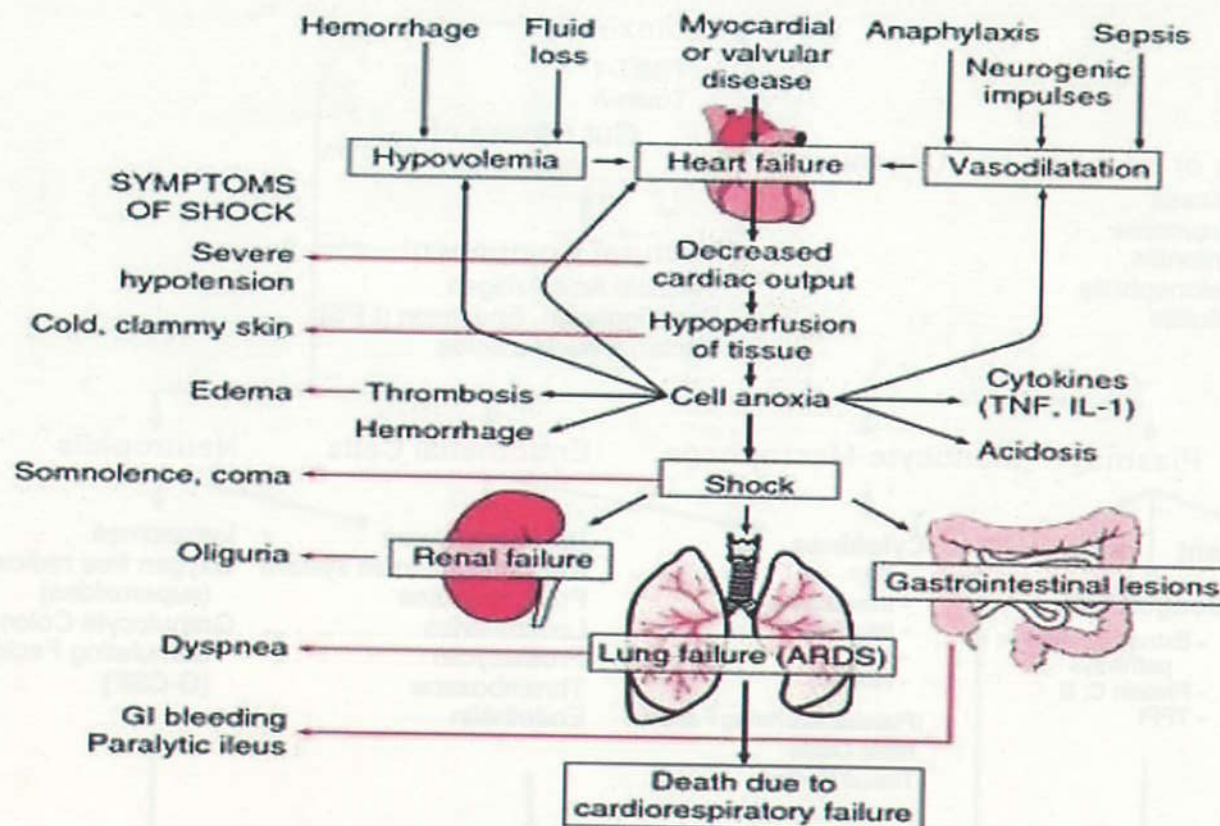


TYPES OF SHOCK

Type of Shock	Insult	Physiologic Effect	Compensation
Cardiogenic	Heart fails to pump blood out •MI, arrhythmia, aortic stenosis, mitral regurg,	↓ CO	BaroRc ↑ SVR
Obstructive	Heart pumps well, but the outflow is obstructed •Extracardiac obstructive causes such as PE, tension pneumothorax, tamponade	↓ CO	BaroRc ↑ SVR
Hypovolemic	Heart pumps well, but not enough blood volume to pump •Hemorrhage •Fluid Loss (Vomiting, Diarrhea, Burns)	↓ CO	BaroRc ↑ SVR
Distributive	Heart pumps well, but there is peripheral vasodilation •Septic, anaphylactic, and neurogenic shock •Pancreatitis, burns, multi-trauma via activation of the inflammatory response	↓ SVR	↑ CO

Pathogenesis of Septic Shock





Pathogenesis of hypovolemic shock

Surgical infection



Carbuncle



Necrotizing fasciitis



Boil (Furuncle)



Erysipelas



Gas Gangrene (Clostridial myositis)



Cellulitis



Hydradenitis Suppurativa



Hydradenitis Suppurativa



Erysipelas



Spasm of the facial muscles (risus sardonicus)



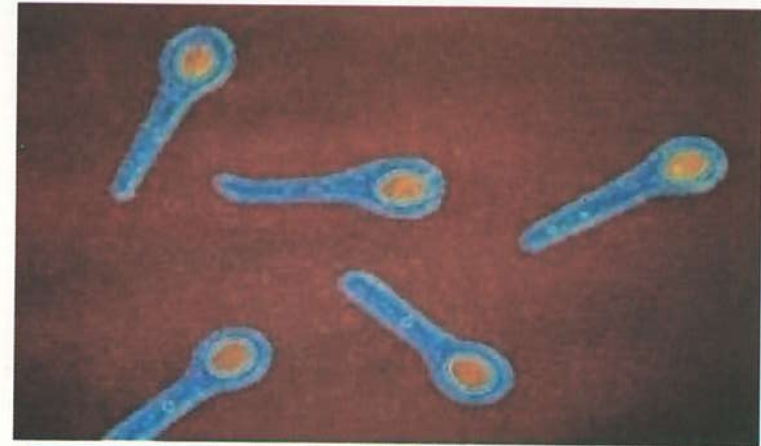
Gas gangrene



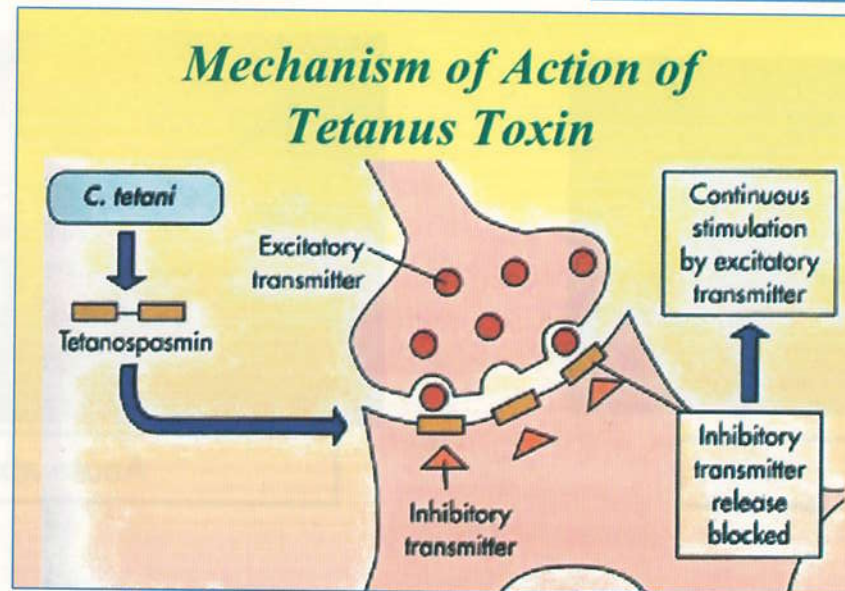
Acute abscess



Acute abscess



Clostridium tetani spores, magnified about 3,000 times their actual size



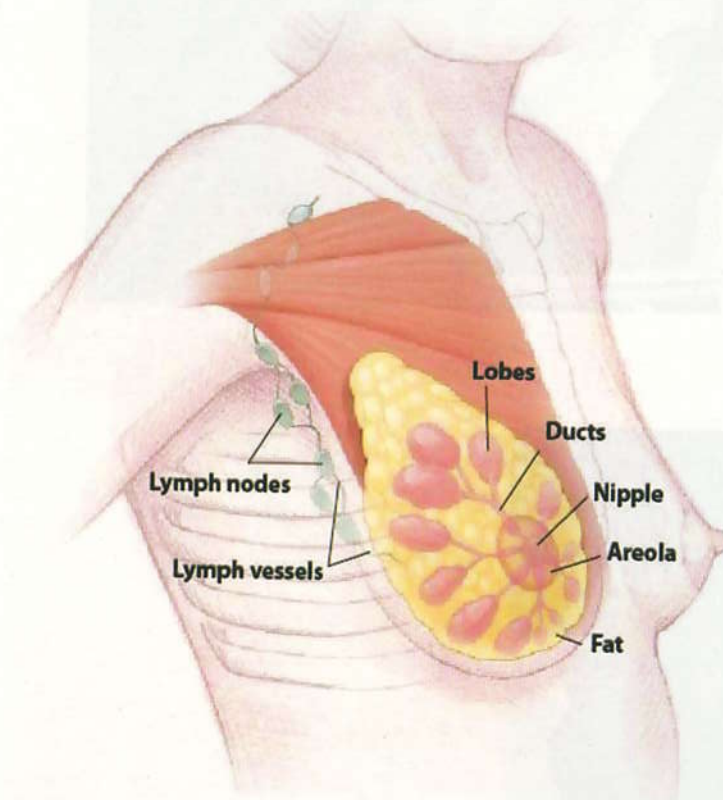


Risus Sardonicus in Tetanus patient



Neck rigidity & retraction

Breast



Anatomy of breast

- **Polythelia**
 - Supernumery nipples over breast
- **Athelia**
 - No nipple over breast (mainly accessory breast)
- **Polymastia**
 - Accessory breast along milk ridge
- **Amastia**
 - No breast development
- **Amazia**
 - Nipple developed, no breast development



Milk lines

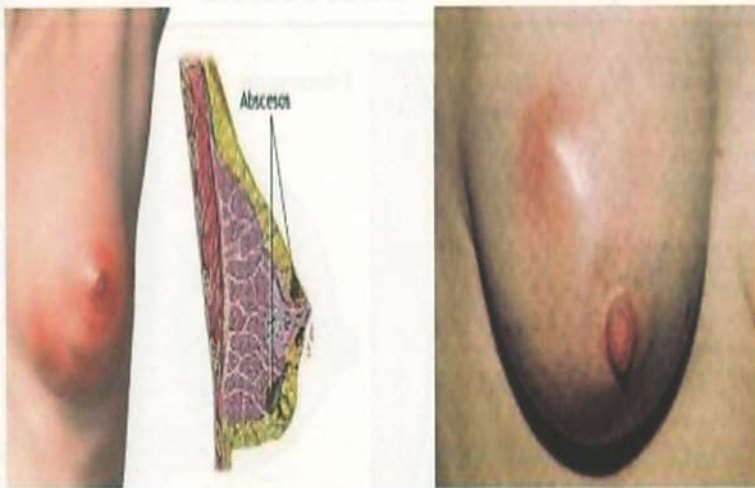
Congenital anomalies of breast



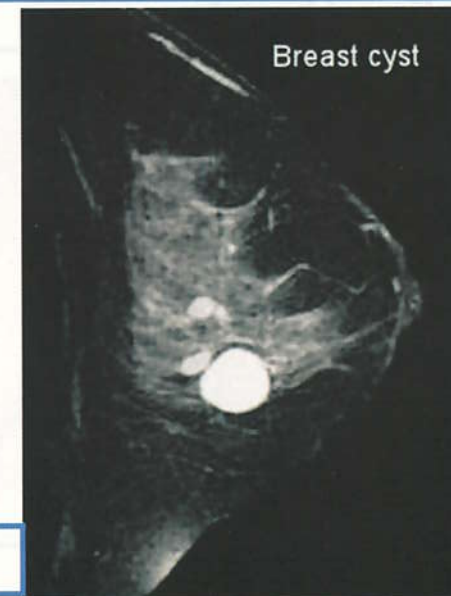
Pumping of breast



Breast hematoma



Breast abscess



Breast cyst



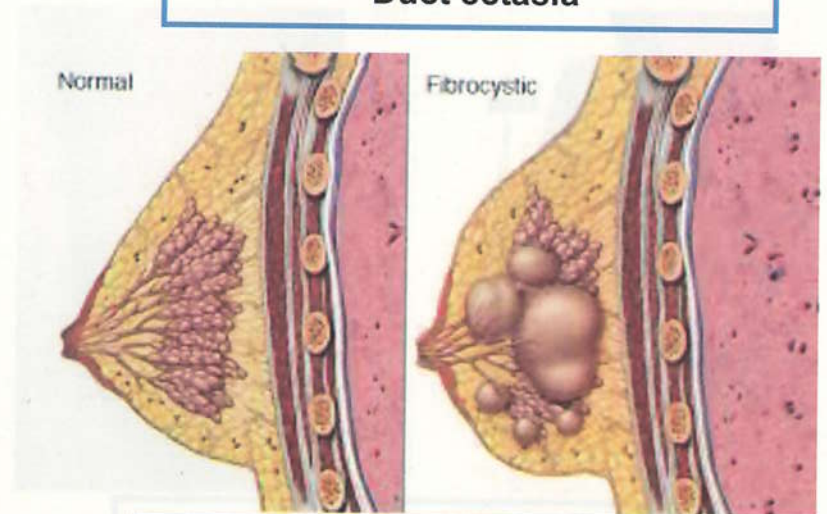
Breast hematoma



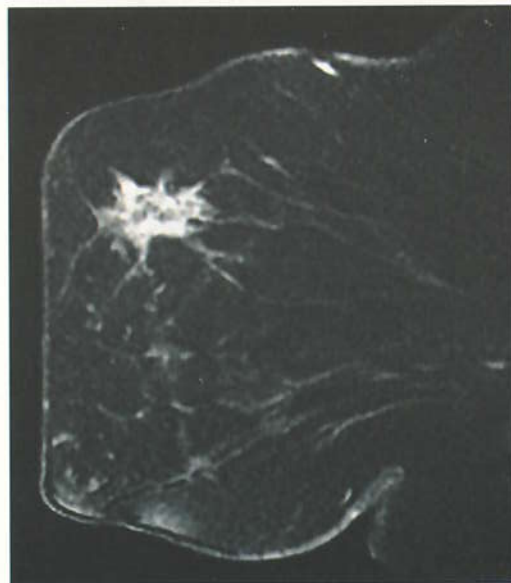
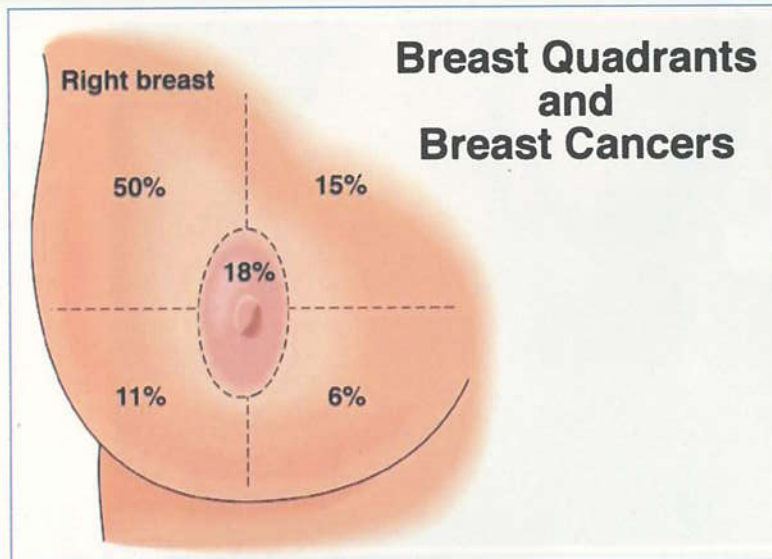
Breast hematoma



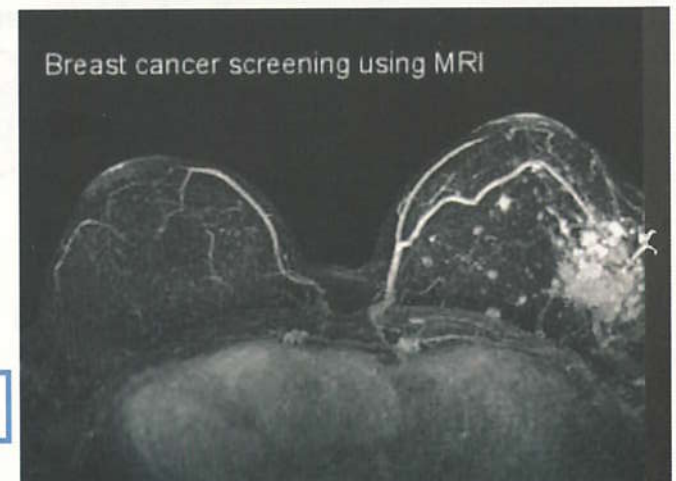
Duct ectasia



Fibrocystic disease of the breast



MRI showing cancer breast



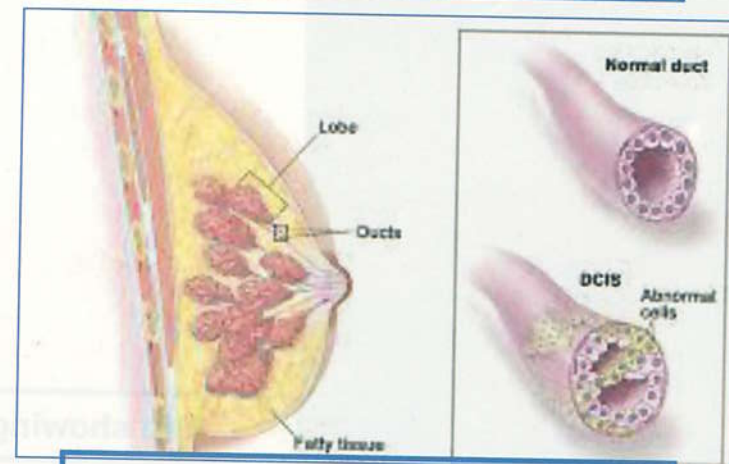
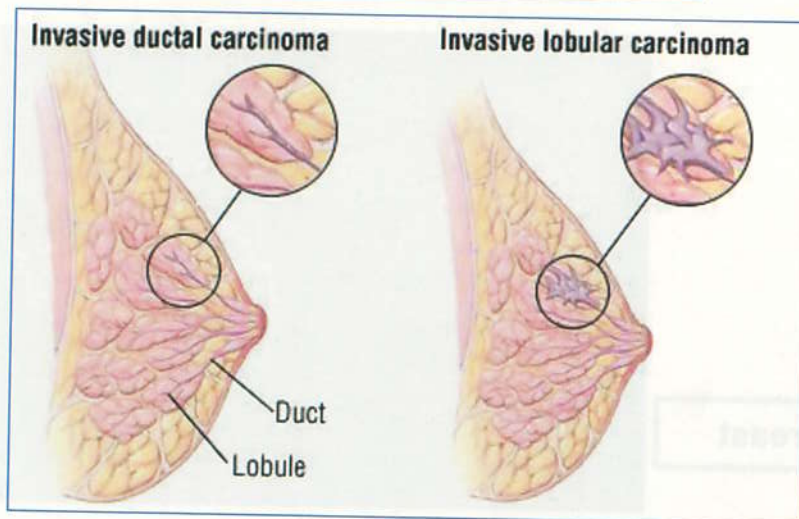
Breast cancer screening using MRI



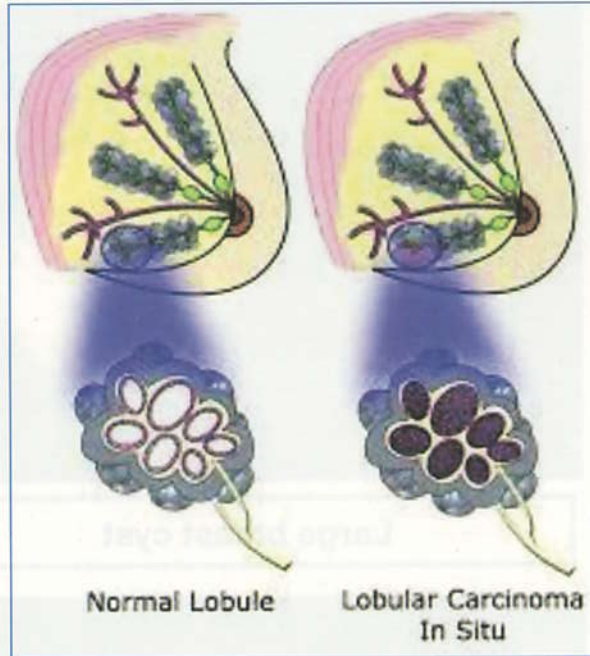
Advanced cancer breast



Cystosarcomaphyloid



Ductal carcinoma in situ



Skin dimpling



Advanced cancer breast





Nipple retraction



Large breast cyst



Cystosarcoma phylloides



Advanced cancer breast

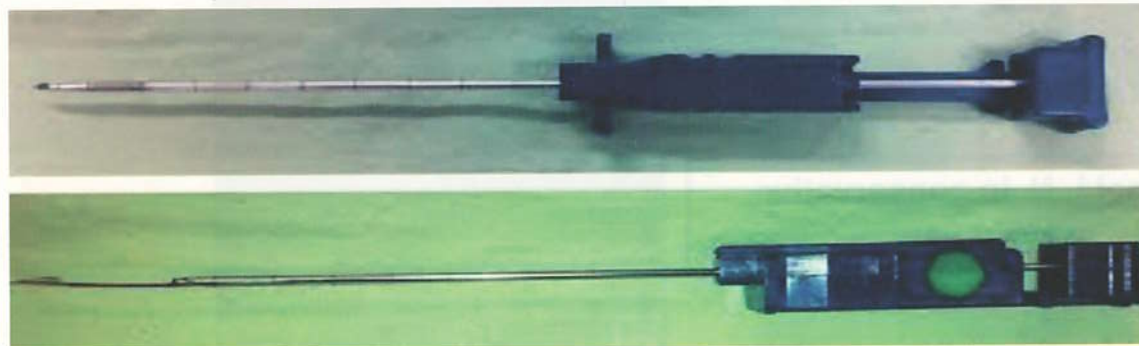


Paget's disease

Paget disease



Peau d' orange



True cut needle



Breast changes

Skin dimpling



Modified radical mastectomy

Sentinel L.N. in conservative
mastectomy





Male cancer breast



Gynecomastia

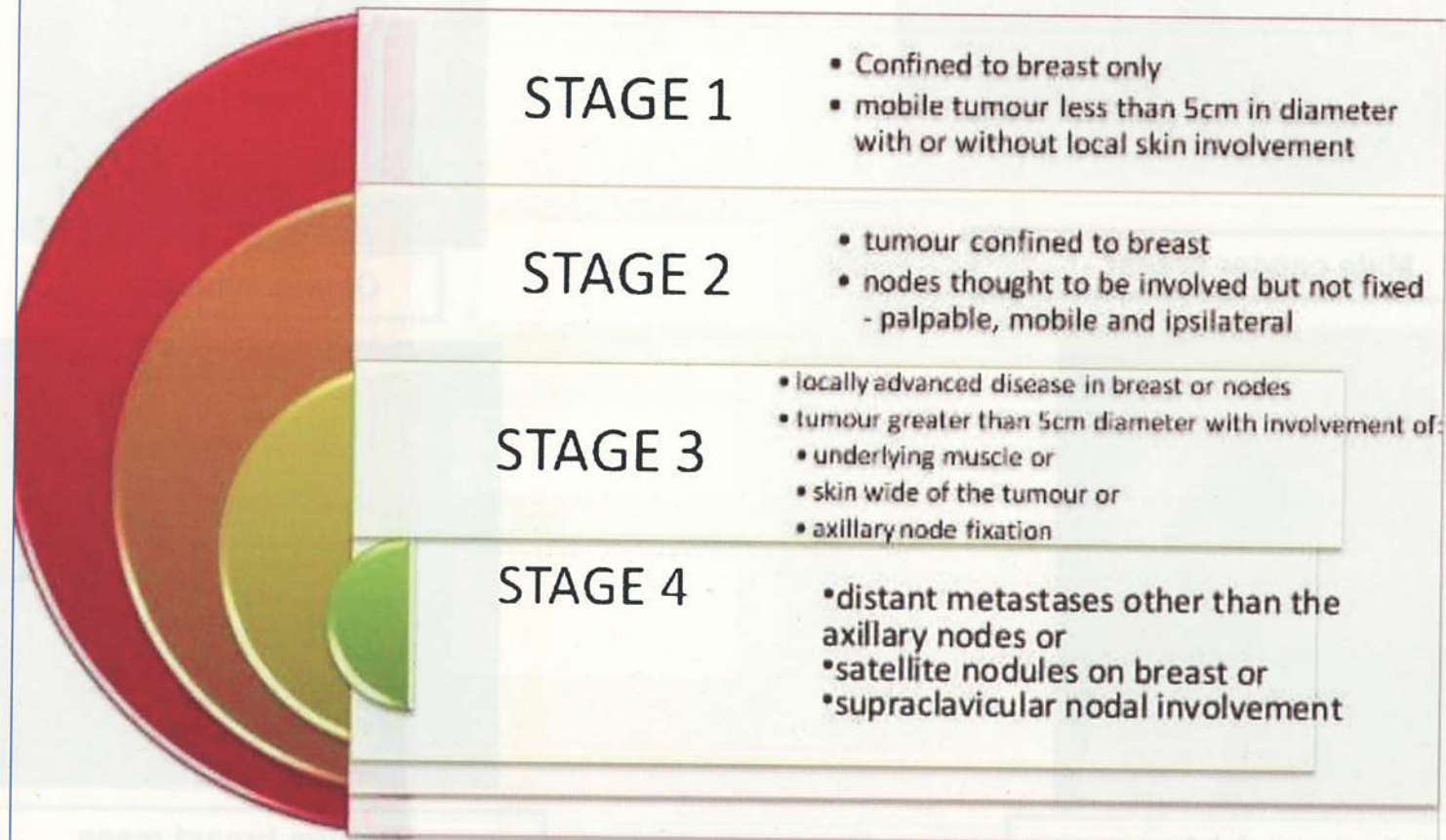


Bleeding per nipple



Benign breast mass

MANCHESTER SYSTEM



Breast self-examination



1 Stand in front of a mirror with your arms relaxed at your sides. Look for changes in the breasts such as swelling, dimpling, or puckering of the skin.



2 Clasp hands behind your head, press hands forward and look for any changes in the shape or contour of the breasts.



3 Continue checking as you press your hands firmly on your hips, hunch your shoulders and lean forward slightly.

4 Gently squeeze each nipple and look for discharge.

5 Raise one arm. Using one or more of the methods below, press firmly with your fingers and feel around the entire breast area for lumps or thickening.

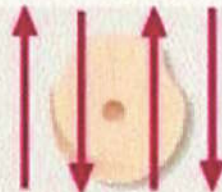
6 Repeat this step in the shower; it's often easier to find lumps when your skin is slick and soapy.



7 Repeat this step while lying on your back. Put the hand of the side you want to examine behind your head. Flatten the breast by placing a folded towel underneath the same shoulder.

Choose a method

Follow one or more of these patterns when conducting a breast self-examination. Pay attention to the area between the breast and underarm, and to the underarm itself. Check above breast, up to collarbone and all the way over to shoulder.



Lines

Start in underarm area. Slowly move fingers downward until they are below the breast, move slightly toward the middle and move back up. Repeat over whole breast.



Circles

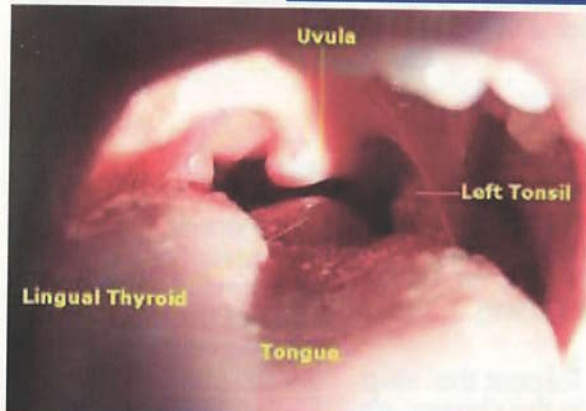
Begin at outer edge of breast. Move fingers slowly around whole breast in a circle. Work in increasingly smaller circles until reaching nipple.



Wedges

Start at outer edge of breast. Move fingers toward nipple, then back to edge. Check whole breast, covering one small wedge-shaped section at a time.

Thyroid gland



Lingual thyroid



Diffuse hyperplastic goitre



Thyroglossal fistula



Colloid goiter



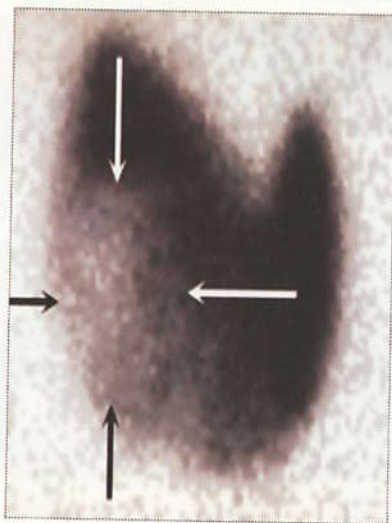
Thyroglossal cyst



Thyrotoxic goiter



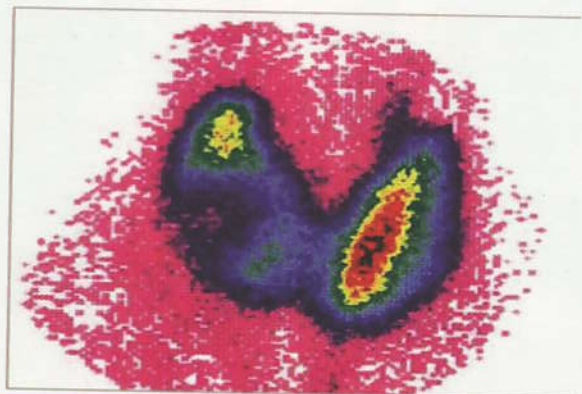
Huge multinodular goiter



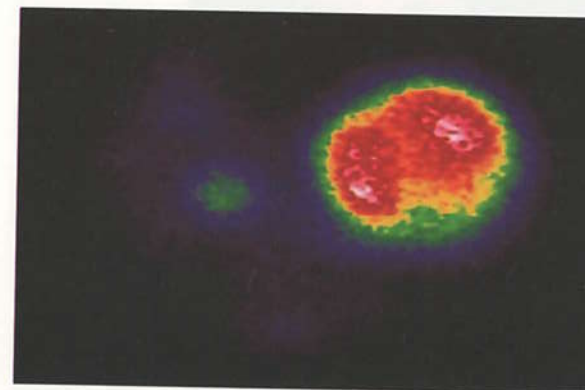
Cold nodule in Rt thyroid gland in isotope scan



Infected thyroglossal cyst



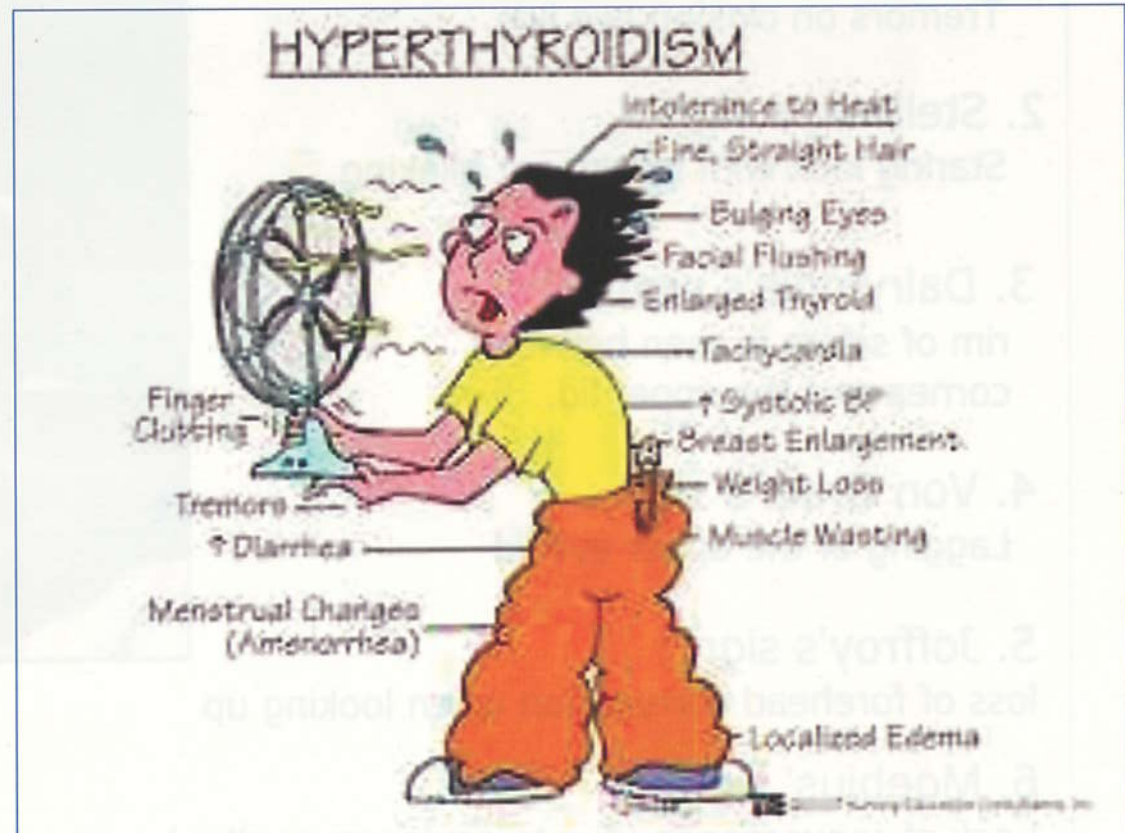
Cold nodule in Rt thyroid gland in isotope scan



Toxic nodule in left thyroid gland upper pole



Graves disease



1. Rosenbach's sign:
Tremors on closing eye lids.
2. Stellwag's sign :
Staring look with infrequent blinking.
3. Dalrymple's sign :
rim of sclera is seen between
cornea and the upper lid.
4. Von Graef's sign :
Lagging of the upper eye lid
5. Joffroy's sign :
loss of forehead corrugation when looking up
6. Moebius' sign :
Lack of convergence (due to ocular myopathy)



Certain eye signs

Arterial system



Acute ischemia of lower limb



Embolus at bifurcation of the artery



Coloured arterial duplex



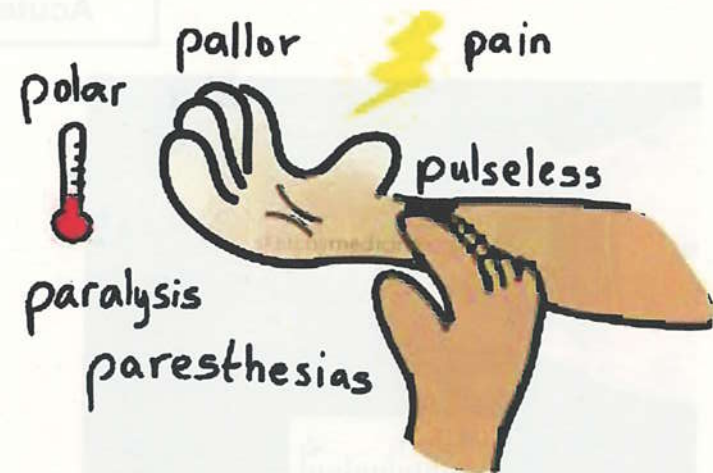
Phlegmasia cerula dolens



Acute upper limb ischemia



Acute upper limb ischemia post
intra arterial drug injection



Features of upper limb ischemia

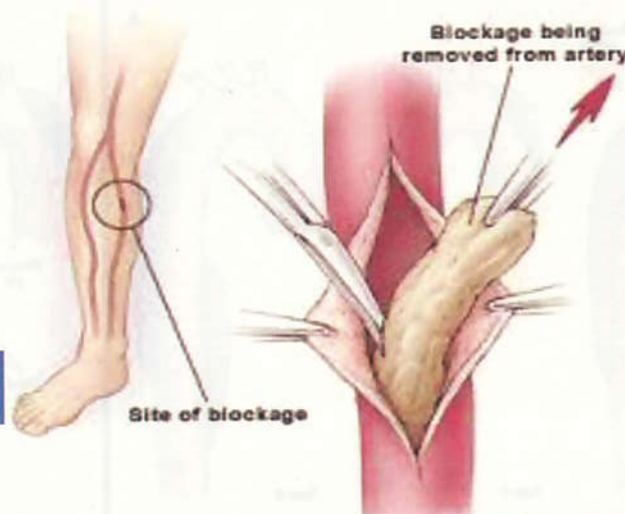


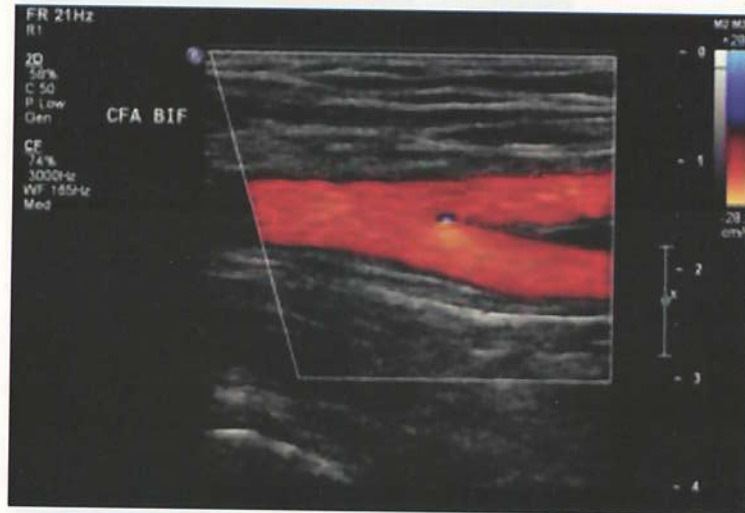
CT angiography of lower limb



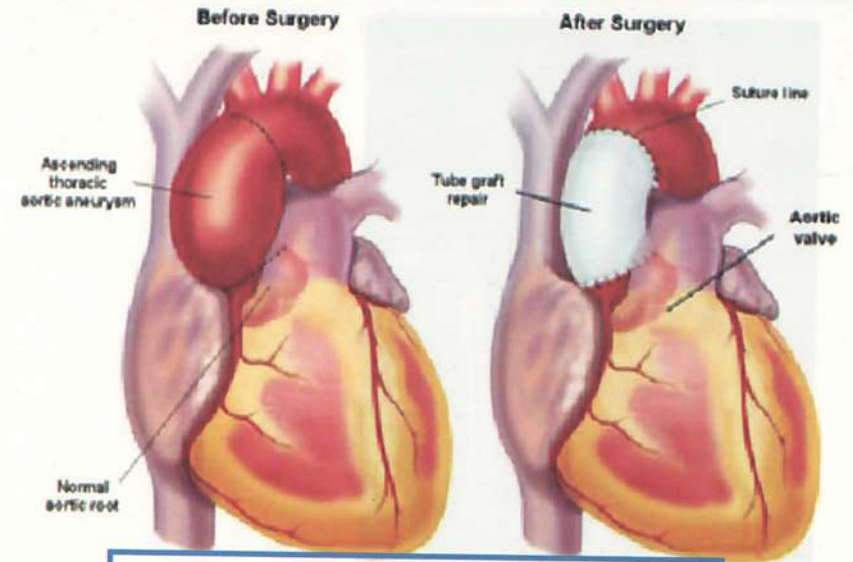
CT angiography of lower limb showing stenosis at popliteal A.

Endarterectomy of post.tibial A.



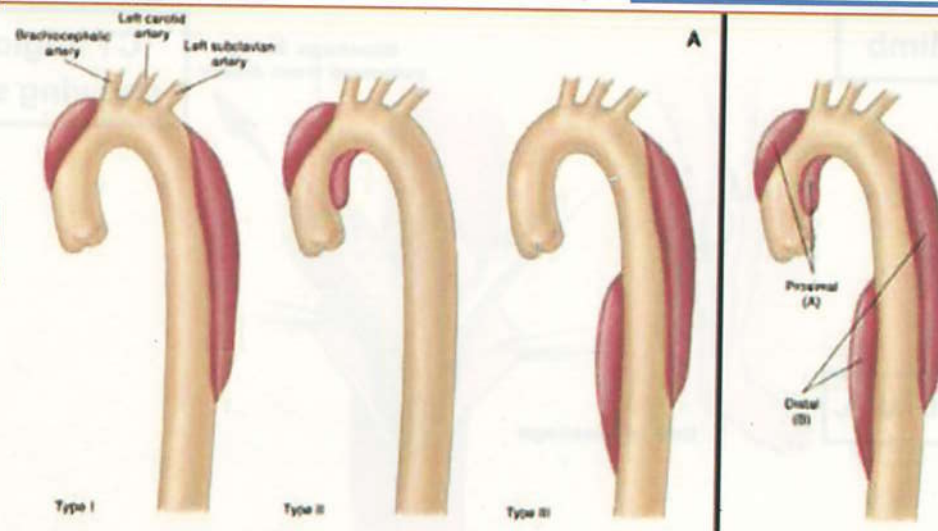


Duplex scan



AAA and repair

Aortic dissection



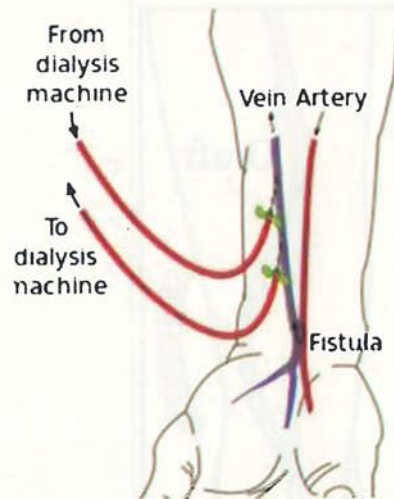


Congenital AV fistula

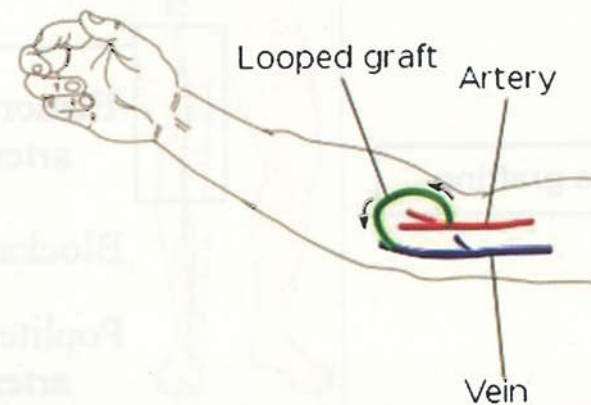


AV fistula

Arteriovenous Fistula

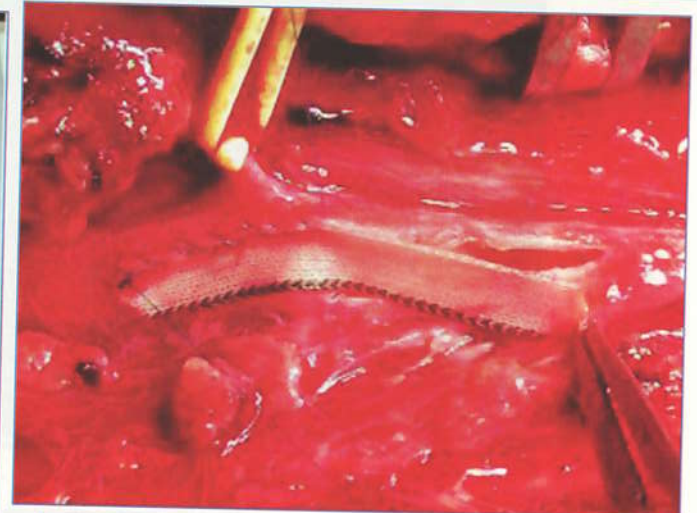


Arteriovenous Graft



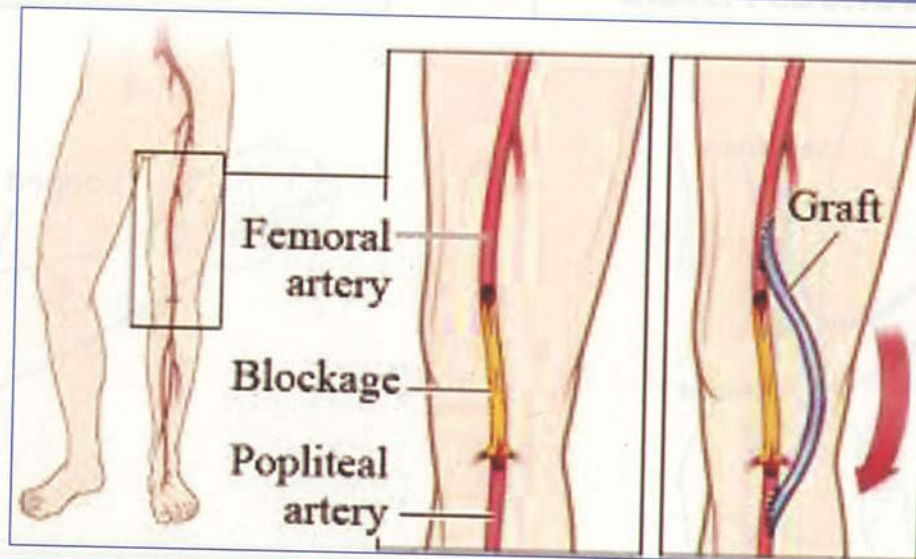


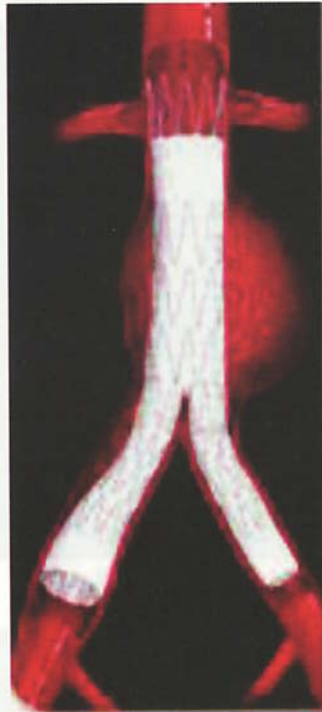
Popliteal artery contusion



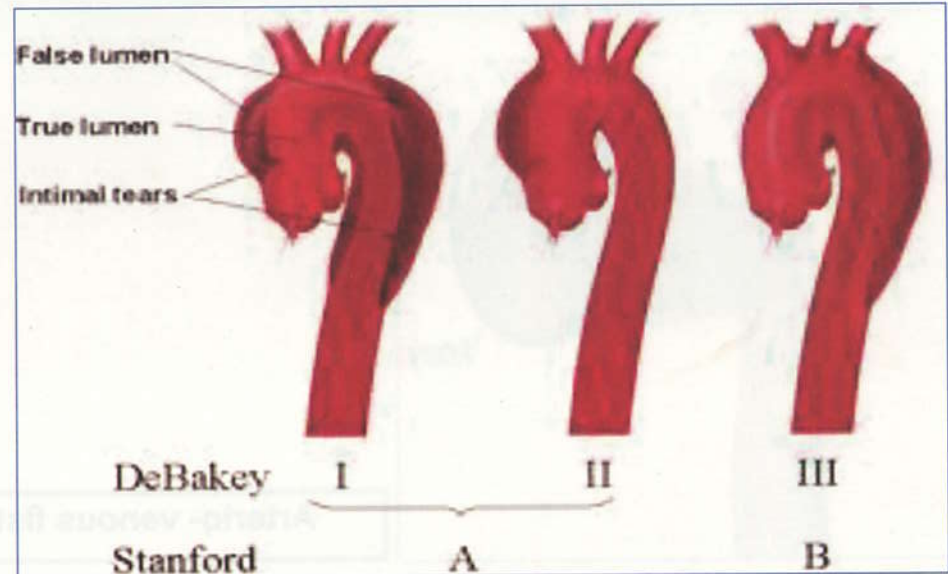
Patch angioplasty

Arterial bypass grafting



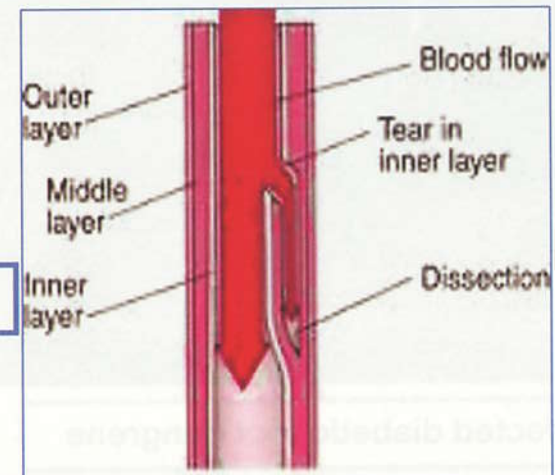


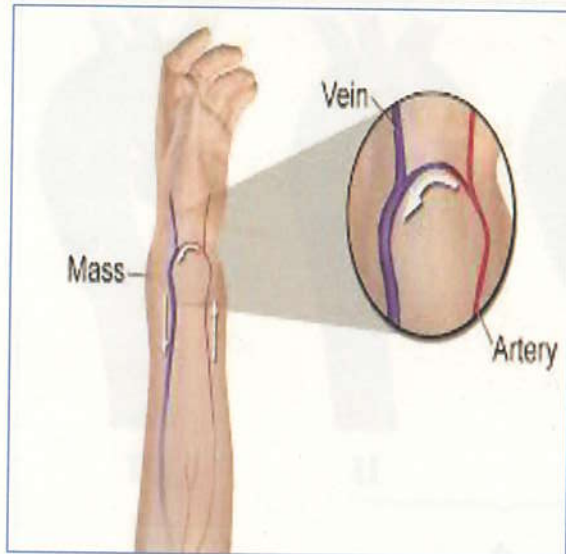
EVAR for abdominal aortic aneurysm



Types of arterial aneurysms

Arterial dissection





Arterio- venous fistula



Infected diabetic foot gangrene



DRY gangrene of lower limb



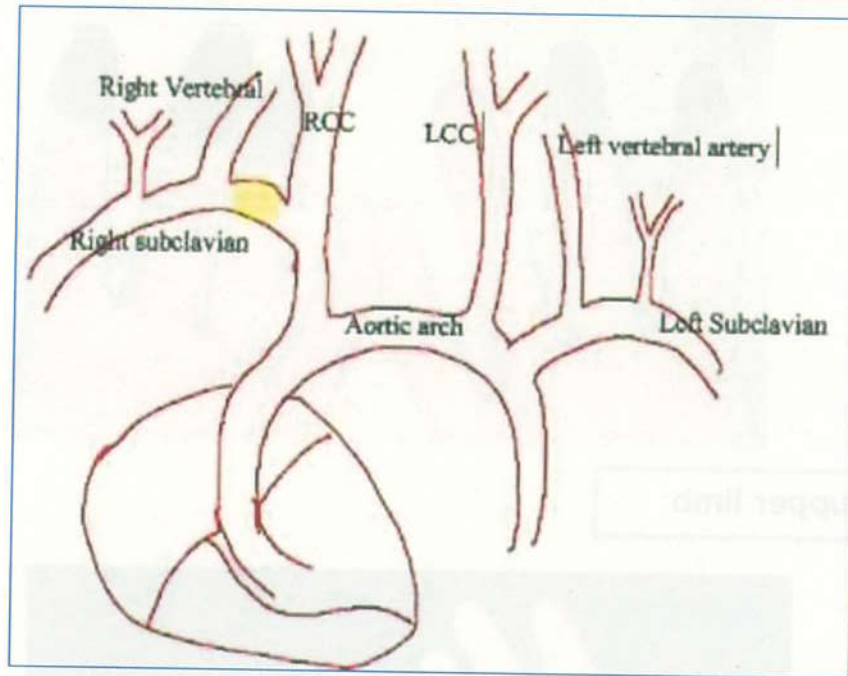
Dry gangrene of upper limb



Raynaud's disease



Diabetic foot infection



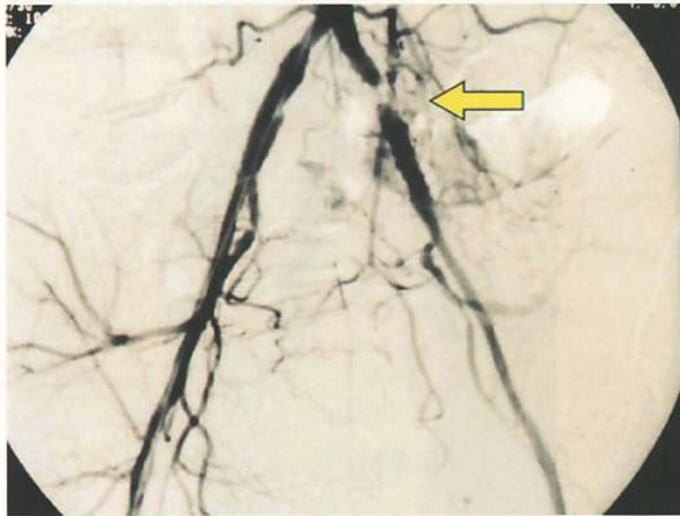
Subclavian steal syndrome



FOGARTY catheter



Acute lower limb ischemia



Left common iliac occlusion



Claudication pain in chronic ischemia



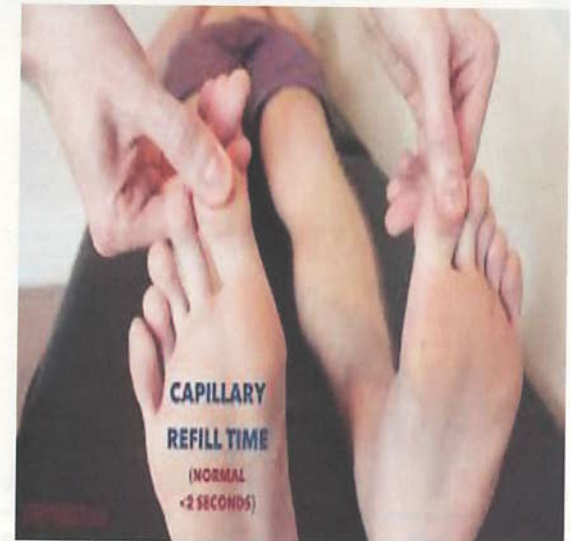
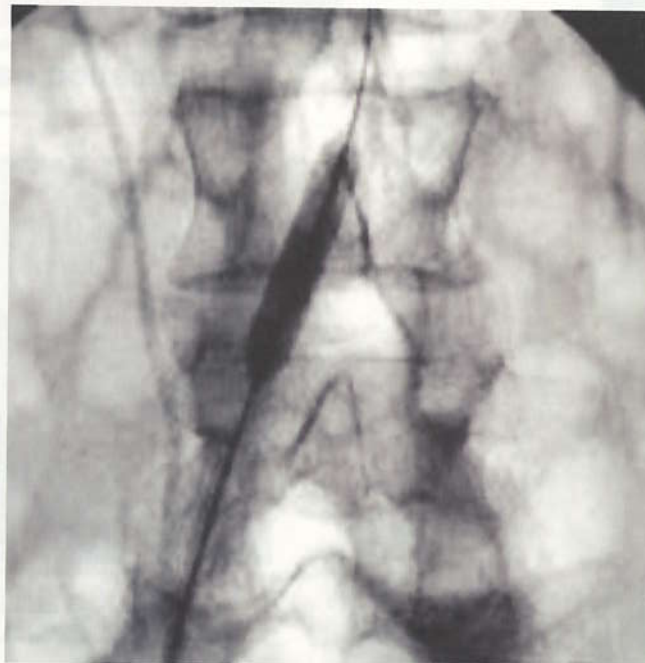
Critical lower limb ischemia



Rest pain in chronic ischemia



Burger disease

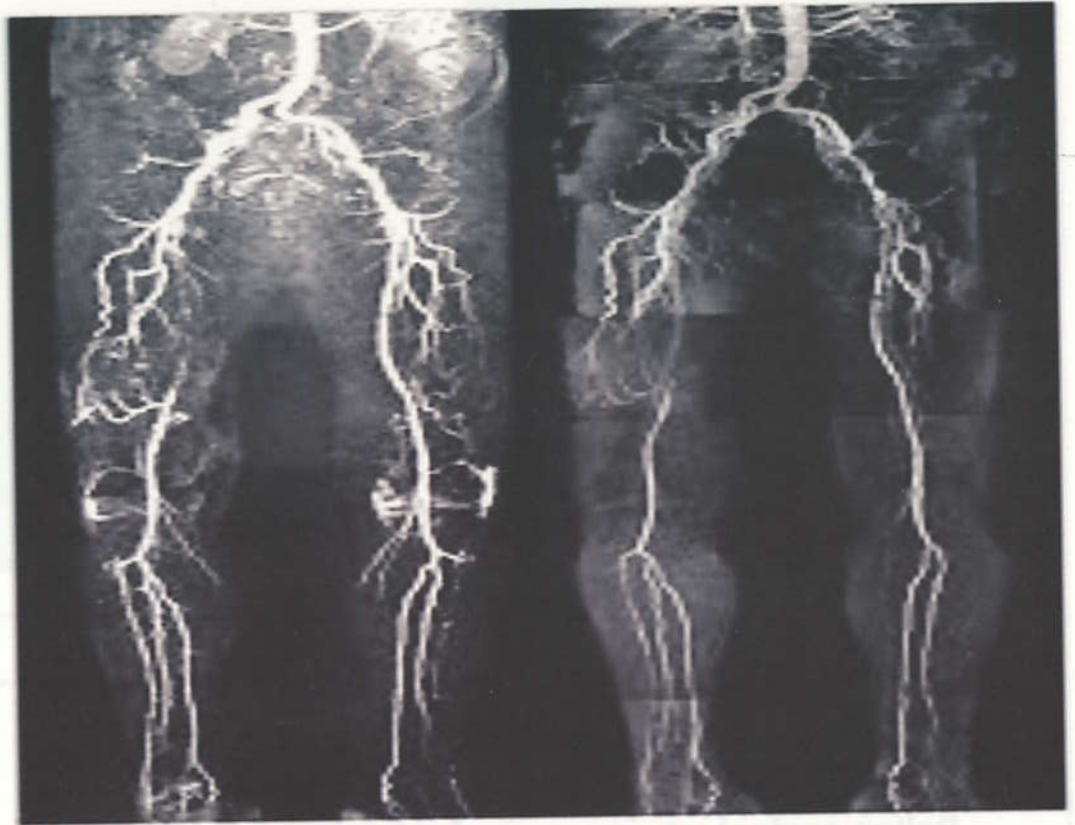


Capillary refill time

Ballon Angioplasty



Raynaud's disease



Magnetic resonance Angiography

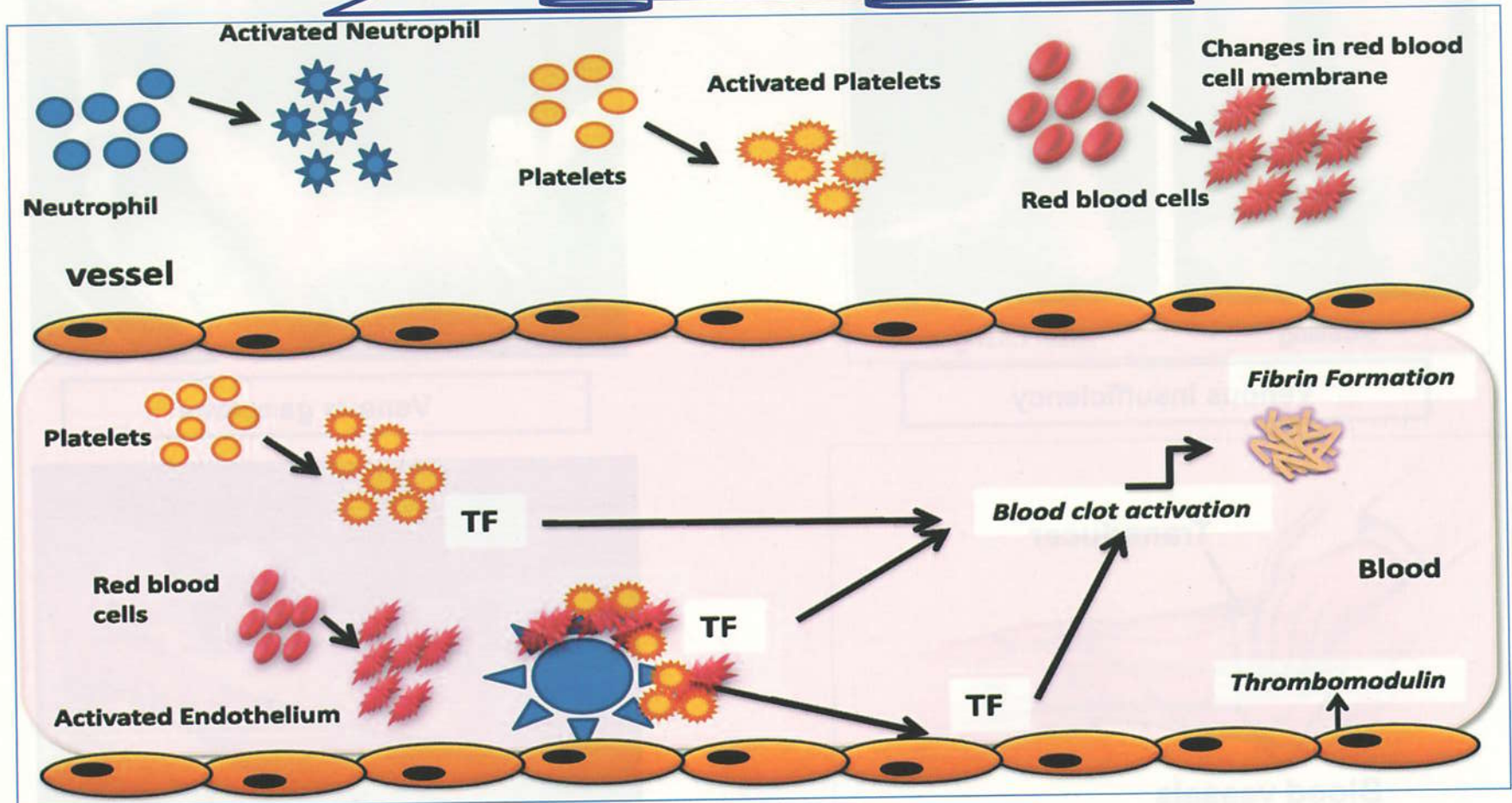


Ballon angioplasty



Diabetic foot ulcer

Venous system



Pathogenesis of DVT



Swelling

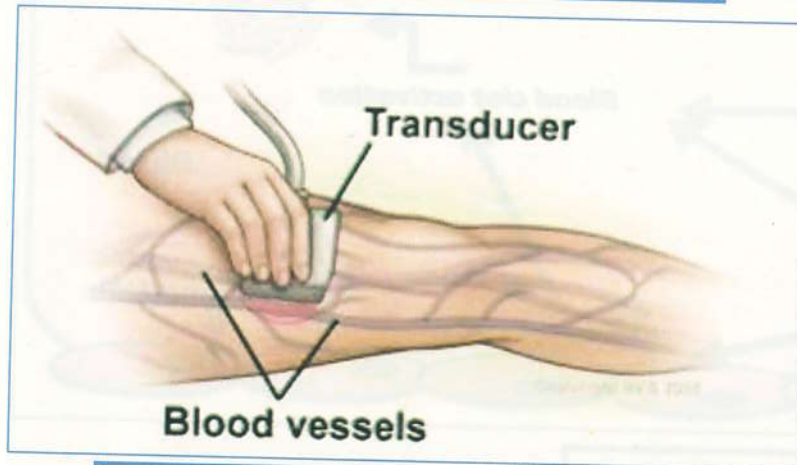


Skin Changes

Venous insufficiency



Venous gangrene



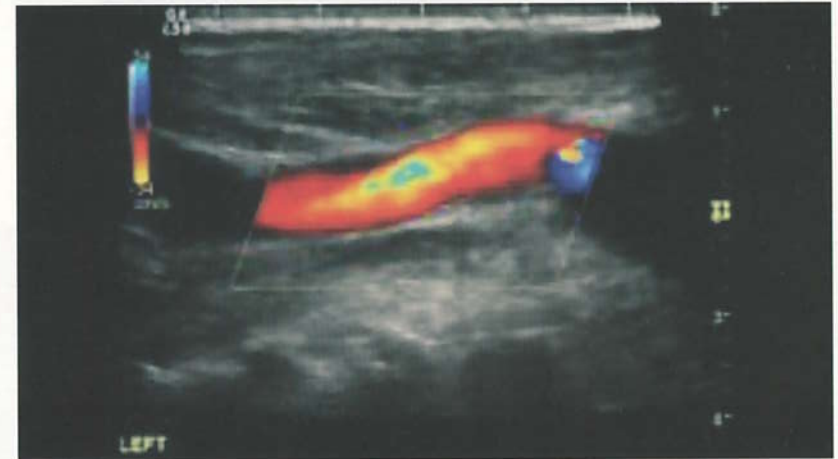
Venous duplex



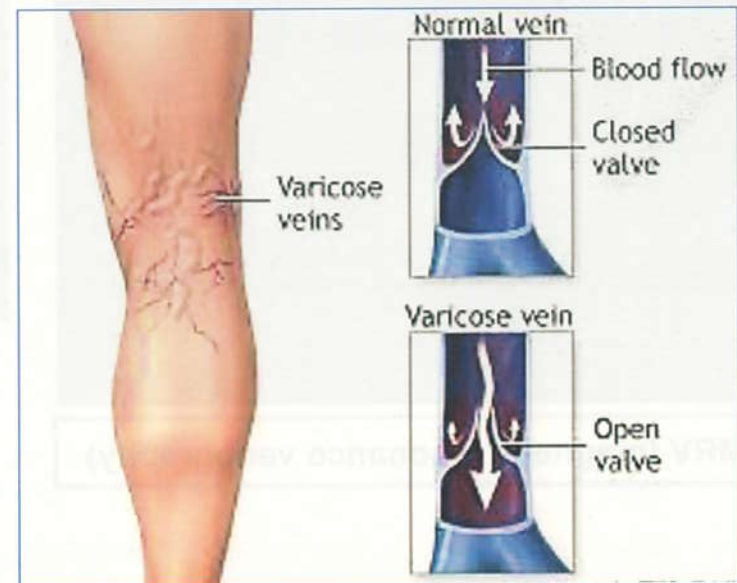
Phlegmasia cerula dolens



CT venography



Venous duplex





MRV (magnetic resonance venography)



Varicose veins and venous ulcer



V.V.



Injection of VV



Venous ulcer





V.V.

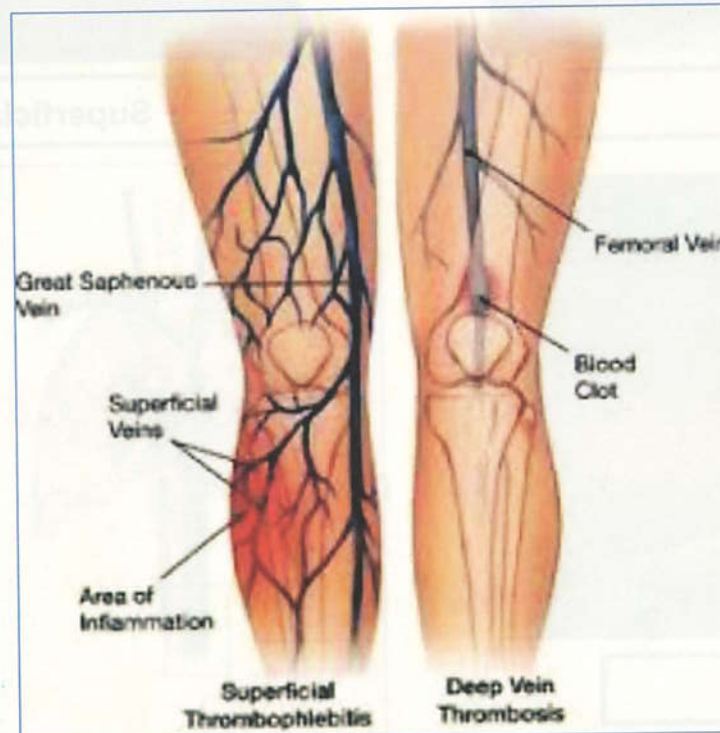


Superficial thrombophlebitis



Venous gangrene

Varicose veins





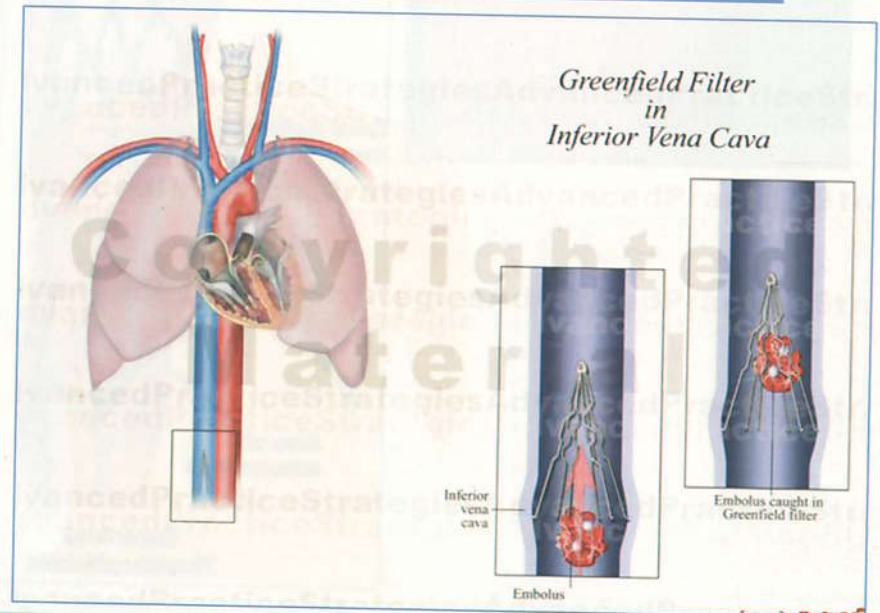
DVT



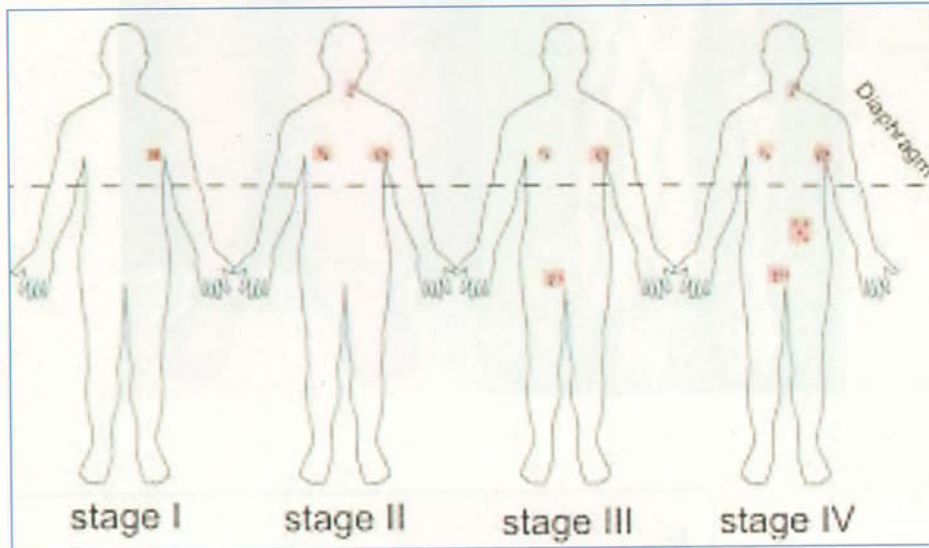
Superficial thrombophlebitis



Venous ulcer



Lymphatic system



Lymphoma stages



Pathology of lymphoma



Chronic lymphatic obstruction
(Lymphedema)



Acute Septic Lymphadenitis



Lymphedema



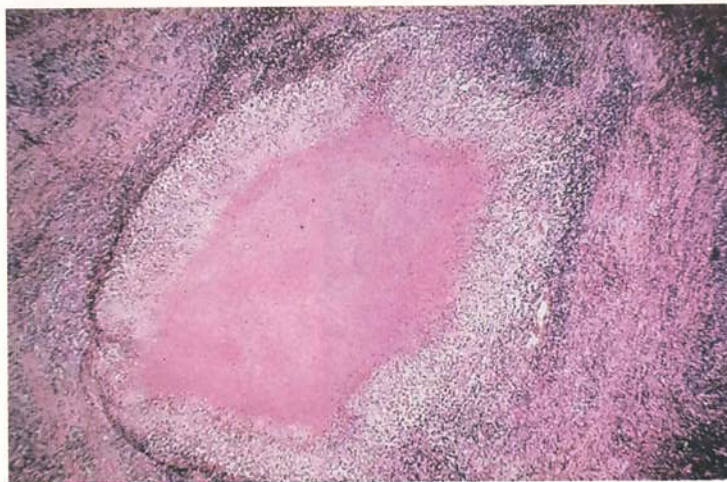
T.B Lymphadenitis



FILARIASIS



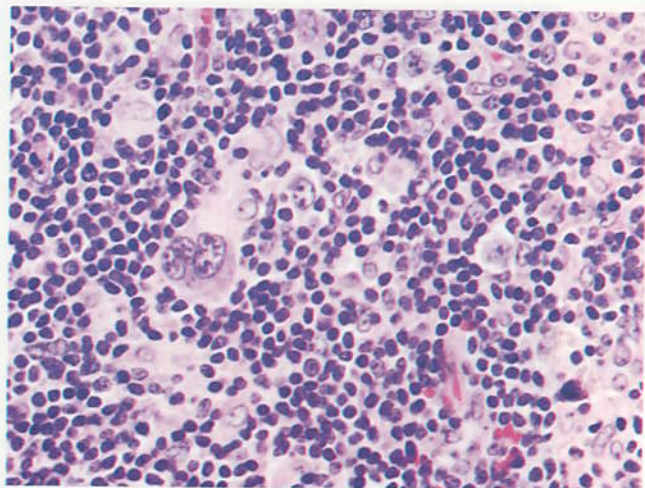
Chronic Non-Specific Lymphadenitis



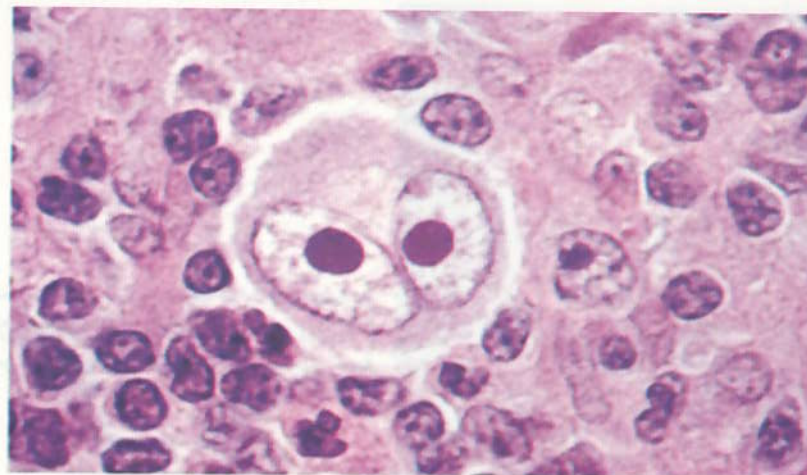
TB of LNs



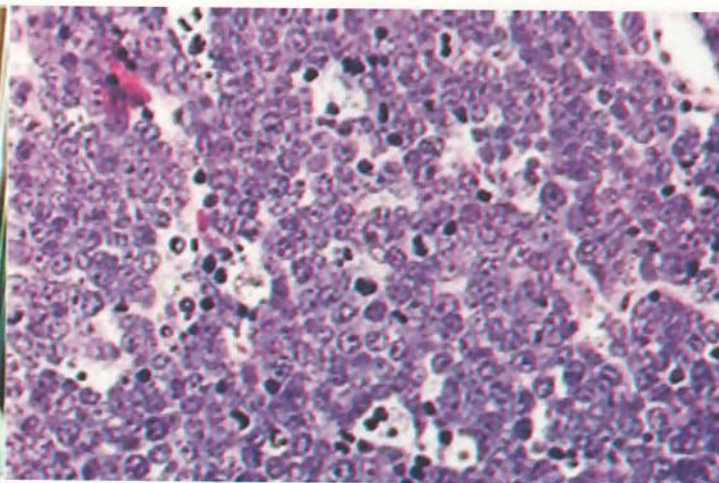
Image of TB lymph nodes



Hodgkin lymphoma

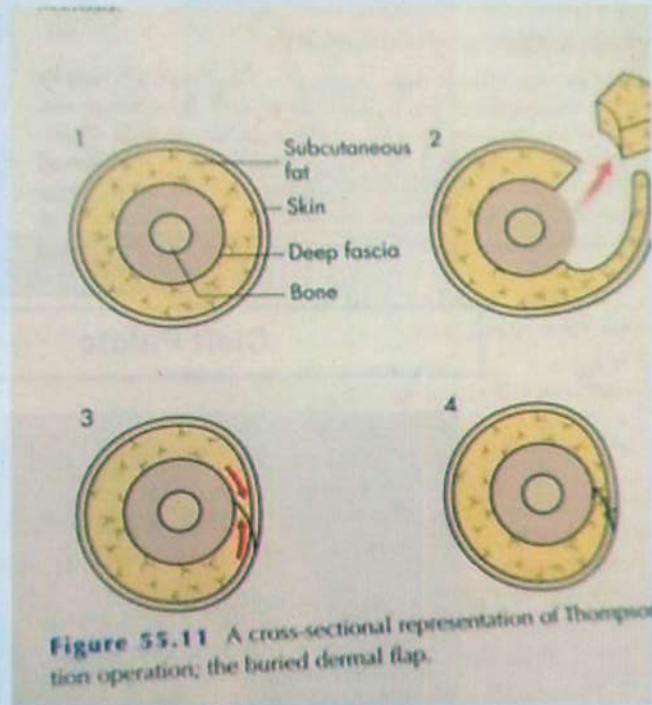


Reed Sternberg cell

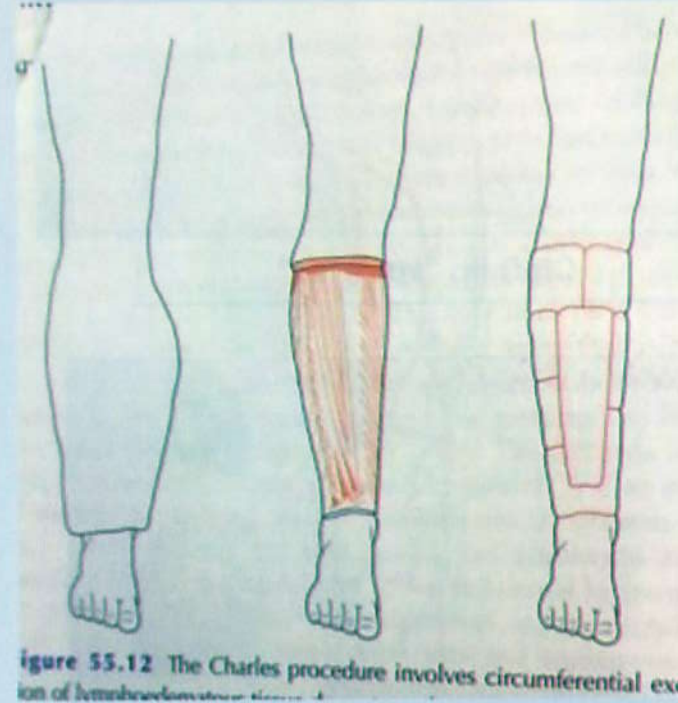


Burkett lymphoma

Thomson operation



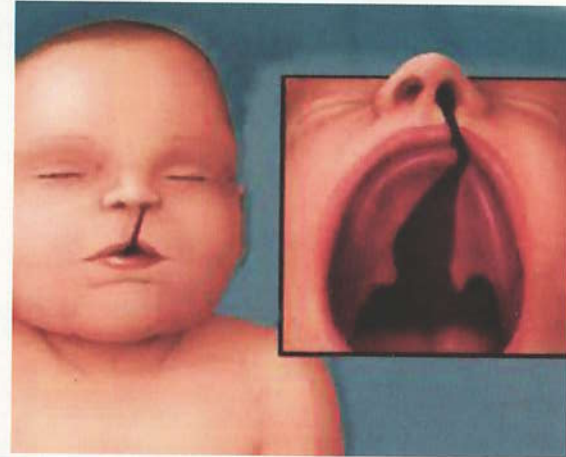
Charles operation



Face

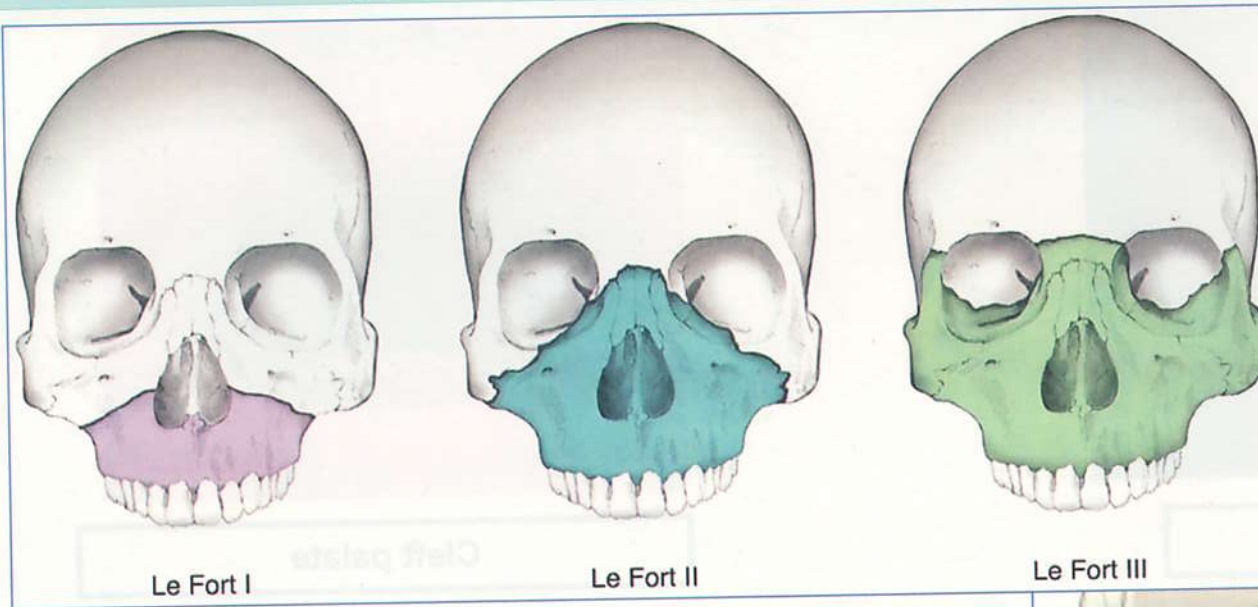


Cleft lip "Hare lip"

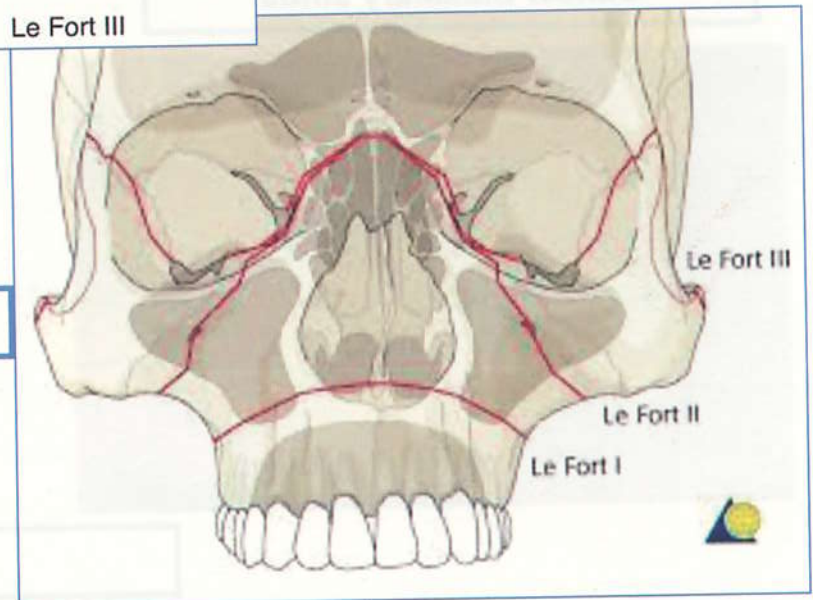


Cleft Palate





Le fort classification of fracture maxilla





Cancer maxillary sinus



Cleft palate



Cancer lip





Fracture nasal bones



Sublingual dermoid cyst



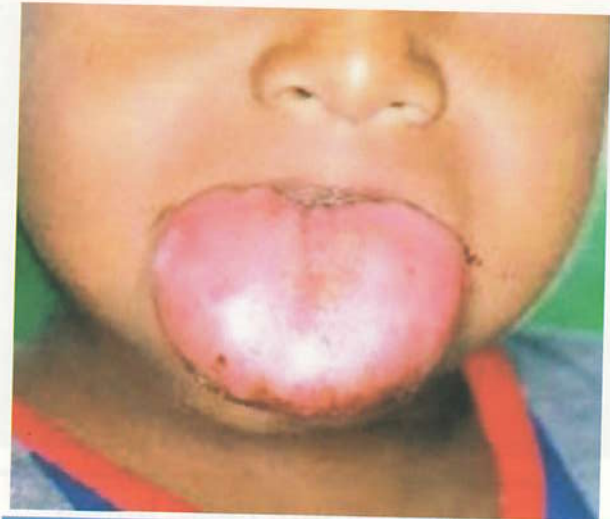
Sebaceous cyst



Dangerous area of the face



Mucous retention



Macroglossia



Tongue tie





Ranula



Macroglossia



Dental ulcer





Chronic superficial glossitis



Cancer tongue



Fibrous epulis



Cancer tongue



Fibrous epulis



Cancer cheek



Granulomatous epulis



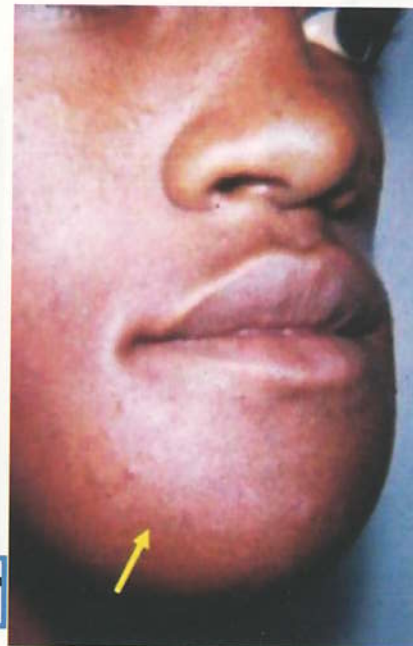
Mucous retention cyst



Myeloid epulis



Carcinomatous epulis



Adamantinoma "Eve's tumor/Ameloblastoma"

Syphilis



A-Ulcerated chancre



B-Ulcerated mucous patches (snail track ulcers)



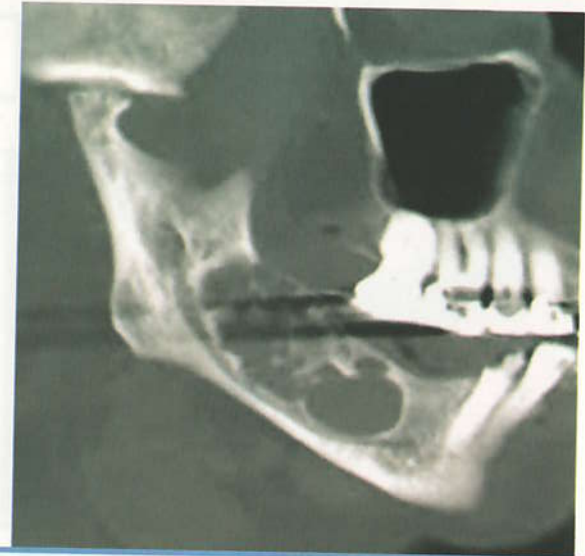
C-Gummatous ulcer

Tuberculosis of the tongue





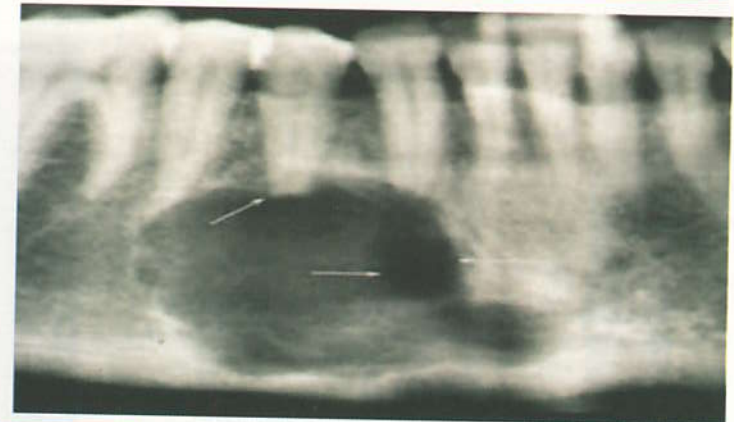
Dentigerous cyst



Dental cyst



Dental cyst





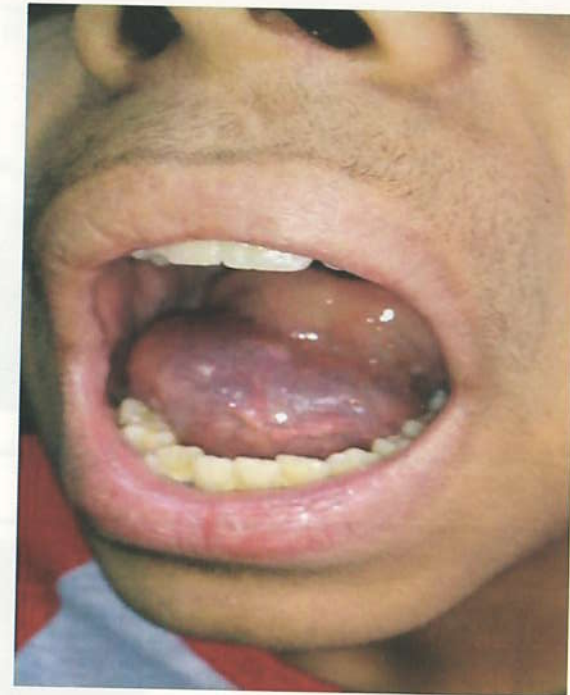
Dental cyst



Hemangiomatous epulis



Malignant tongue ulcer



Plunging ranula

Salivary glands



Parotitis



Salivary fistula



Sialogram showing stone in duct



Parotid tumor



Snowstorm in chronic parotitis



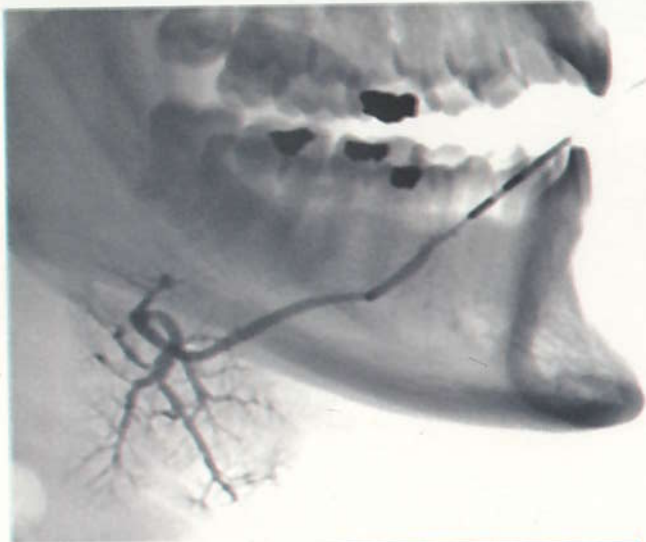
Sublingual gland stone



Parotid abscess



Parotid tumor



Submandibular sialography



Submandibular stone



Parotid adenocarcinoma

Sjogren's Syndrome

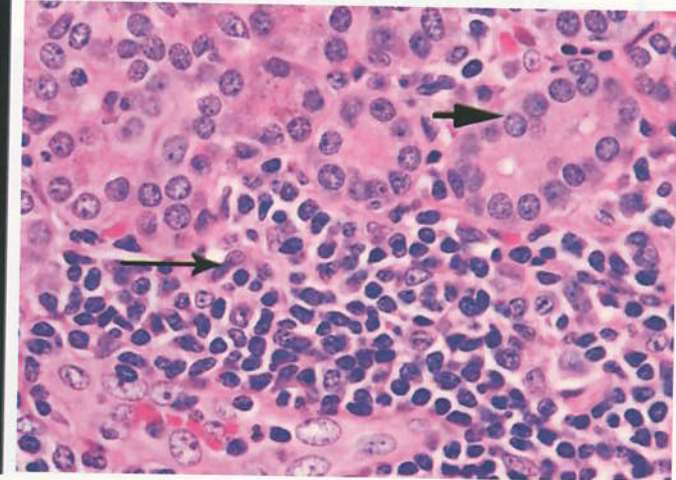
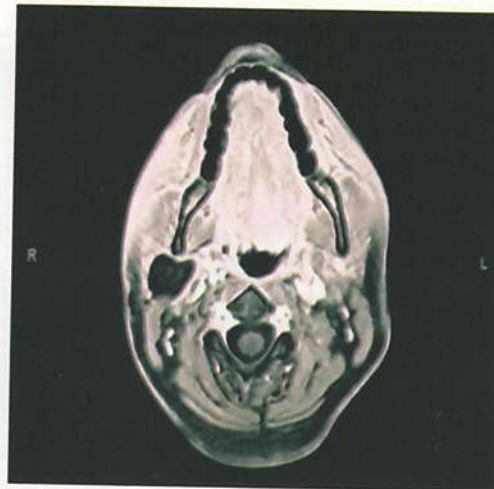
Dry eyes,
damage to
eye surface



Dry mouth,
increased
tooth decay



Sjogren syndrome



Benign lymphoepithelial lesion (histology)

Sialadenitis (benign lymphoepithelial lesion associated with sjogren)

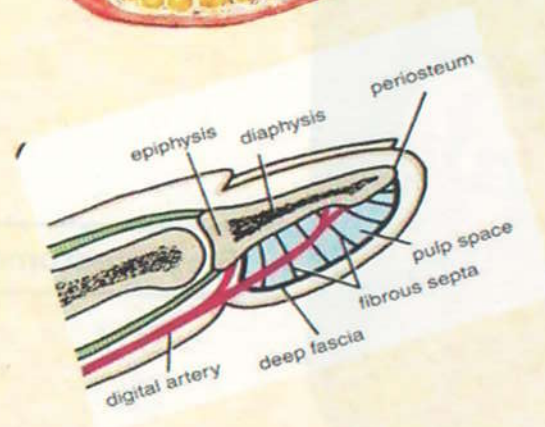
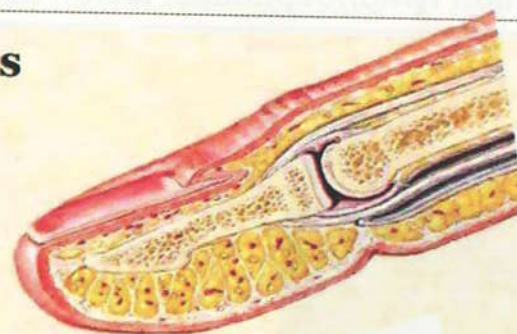


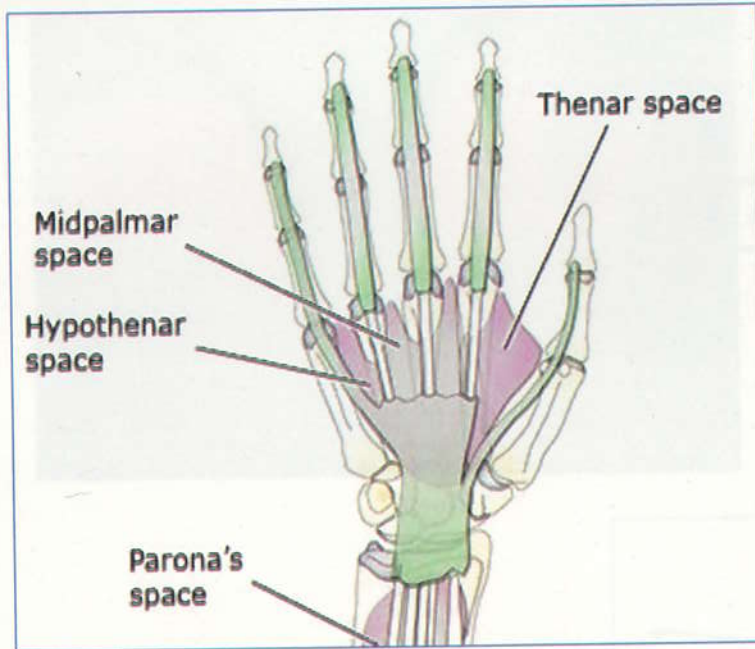
Frey syndrome

Hand infection

SUPERFICIAL PULP SPACE OF FINGERS

- Each pulp space filled with fat is subdivided by the presence of numerous septa
- Through pulp space runs the terminal branch of the digital artery that supplying the diaphysis of the terminal phalanx.
- The epiphysis of the distal phalanx receives its blood supply proximal to the pulp space.





Anatomy of hand



Acute paronychia





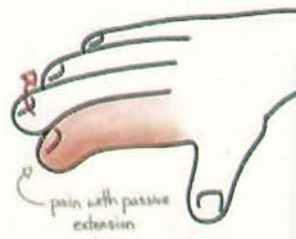
Thenar space infection



tenderness along tendon sheath



fusiform swelling



- Tenderness over & limited to the flexor sheath
- Symmetrical enlargement of the digit ("fusiform")
- Severe pain on passive extension of the finger (> proximally)
- Flexed posture of the involved digit

Kanavel's cardinal sign



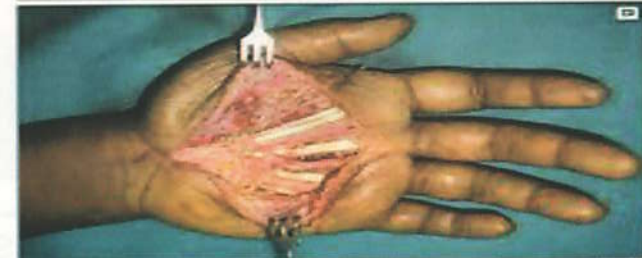
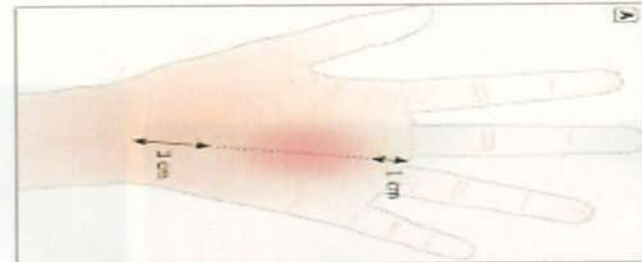
Thenar space infection



Acute Tenosynovitis "Most serious hand infection"



Mid palmar space infection



Thenar space infection



Dupuytren's contracture



Simple ganglion





Volkman's Ischemic Contracture

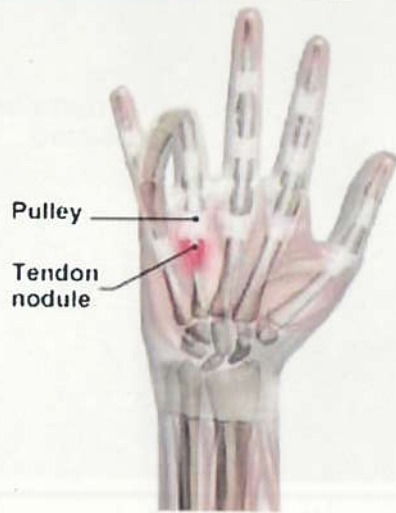


Prepatellar bursitis



Ingrowing toenail





An inflamed nodule on the flexor tendon catches at the pulley, temporarily locking the finger in the flexed position.

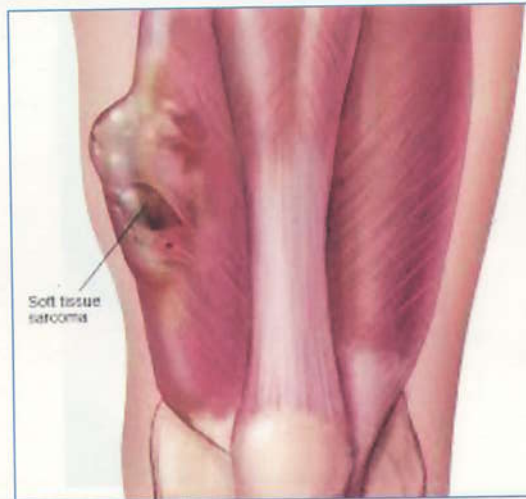
Trigger finger

Tennis Elbow

also called **lateral epicondylitis**, causes pain on the outside of the elbow.

Golfer's Elbow

also called **medial epicondylitis**, causes pain on the inside of the elbow



Soft tissue sarcoma



Acute paronychia



Thenar space infection



Volkmann's Ischemic Contracture



Carpal tunnel \$



Web space infection



Parona space infection



Pulp space infection

Skin



Port wine stain, Nevus flammeus



Strawberry angioma

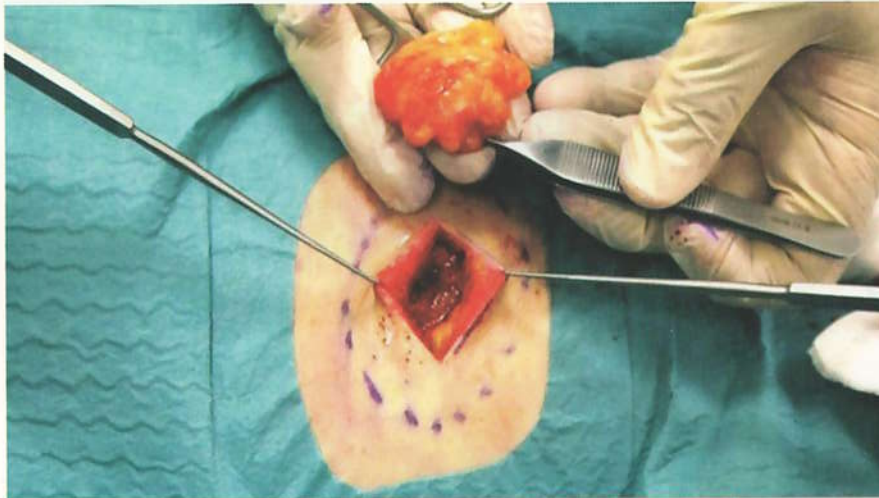


AV malformation



Lipoma





Surgical removal of lipoma

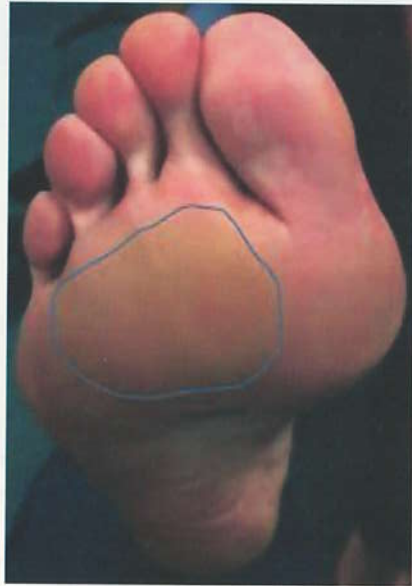


Dermoid cyst



Molluscum sebaceum (Keratoacanthoma)





Callosity



Melanoma





Sebaceous cyst



Papilloma



Cercoid aneurysm



Melanoma



Sequestration dermoid cysts



Teratomatous dermoid



Implantation dermoid



Tubulo-dermoid cyst



(a) A well-circumscribed soft tumor with outer surface covered by fibrous capsule. (b) Cut section showing yellowish, greasy solid tumor with lobulated appearance

Other

BOOKS

By the author

CLINICAL SURGERY

SURGICAL OPERATIONS

SURGICAL INSTRUMENTS

SURGICAL RADIOLOGY

SURGICAL ANATOMY

SUMMARY

SURGICAL JARS

DIFFERENTIAL DIAGNOSIS

CASES

MULTIPLE CHOICE QUESTIONS

TRUE OR FALSE

GASTROINTESTINAL SURGERY




MATARY
SURGERY